



VALUE-BASED POWER TRADING

USING THE OVERLAY
DEMAND CURVE™
TO PINPOINT
TRENDS &
PREDICT
MARKET
TURNS

DONALD L. JONES

VALUE-BASED POWER TRADING

The Market Profile™ continues to revolutionize futures market analysis. By organizing price and time into a usable format, the Market Profile™ provides extraordinary insights into the dynamics of the marketplace. Indeed, through the prism of the profile many traders feel they can actually “read” the market.

Unfortunately, the process of translating Market Profile™ analysis into profitable trades has been difficult for many traders—at least until now. *Value-Based Power Trading* brings to life the dormant potential of the Market Profile™, providing traders with an explicit, rule-based system that utilizes the insights afforded by the profile to generate consistently profitable trading signals.

In this important new book, Donald Jones demonstrates how his patented Overlay Demand Curve™ integrates data into a “super profile” which identifies the market’s structure and condition. The “super profile” shows what the market’s principal players are doing, where value exists, and provides traders with the ability to interpret market behavior as it unfolds.

Jones explains how to spot critical “reference points” that define the market’s long-term condition. Once the reference points are clear, a trader can plot strategy in an objective, unambiguous manner.

Unlike previous books on the Market Profile™, *Value-Based Power Trading* explains how to analyze the market from both a long-term and short-term perspective. It shows how to recognize market turning points and it provides traders with precise strategies to profit from major market moves.

Jones provides systems for day trading, breakout trading and responsive trading. He shows how to choose the right strategy for any given market situation. Most importantly, he proves the profitability of his systems by subjecting them to real-market tests. The shift from price-based, technical analysis to value-based, Market Profile™ analysis is a revolution in the making. *Value-Based Power Trading* may very well mark a culmination of that revolution. Specific topics in this groundbreaking work include:

- How to use the Overlay Demand Curve™
- How to determine the condition of the market
- How to recognize value
- How to spot market “reference” points
- Systems for day trading and position trading

About the Author

Donald L. Jones is Founder and President of Commodity Information Services Co., a research and advisory firm specializing in a value-based approach to futures trading. He has written numerous articles on trading and is co-author of *Hedging Foreign Exchange* (John Wiley, 1987). Mr. Jones was elected fellow of The Market Profile™ Society International. He holds a Master’s degree in Aerospace Physics from the University of Colorado.

VALUE-BASED POWER TRADING

"*Value-Based Power Trading* is the Market Profile™ book I wish I had written! This book can be helpful to both experienced and inexperienced students of the market."

Thomas P. Drinka
Professor
Western Illinois University

"*Value-Based Power Trading* does an excellent job of driving home the most fundamental element to understanding and making money in the financial markets: all prices are not created equal. An intuitive understanding of this simple concept has long separated the professionals from the rest of the pack. This book bridges this gap and helps explain why traders, like prices, are not created equal."

James F. Dalton
Sr. Vice President, Director of Futures
PaineWebber Inc.

"Donald Jones expands the concepts of the Market Profile™ with his book, *Value-Based Power Trading*. He explores a powerful analytical tool which has grown from his research: the Overlay Demand Curve™. This book will answer questions which have bothered early users of the Market Profile™. Experienced profile traders and those traders searching for new approaches will find this book provides some exciting new concepts."

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Trading Advisor, *Iowa Grain Co.*

"A must read for anyone looking to improve the consistency of their trading. Starting with a thorough dissection of the data, *Value-Based Power Trading* presents a consistent and thorough approach to selecting, managing and exiting trades using a wealth of new Market Profile™ and Liquidity Data Bank™-based information."

Eric T. Jones
Vice President, Director of Product Development
PaineWebber Inc.

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Preface

Back in the early 1980s, J. Peter Steidlmayer talked the Chicago Board of Trade into collecting and releasing the Liquidity Data Bank/Market Profile™. These data signaled a new era in futures analysis. For the first time we could see how much volume took place at each traded price and which class of member on the floor was doing the trading. Further, by breaking the trading day into half-hour “mini-days,” it became possible to see how trading was distributed within the day. The half-hourly data could be shown as standard half-hour bar charts; when the bars were collapsed onto the price axis, they formed a distribution, i.e., the Market Profile.

These new data came with an analytical methodology. Based on Steidlmayer’s experience as a floor trader, Market Profile analysis described daily market behavior to an unparalleled degree. The market came alive with initial balances, range extensions, day types, price rotation, initiating activity, responsive activity, and much more. Many traders, for the first time ever, began to understand the dynamics of the marketplace in which they risked their money.

The stated aim of Market Profile analysis was to find “free exposure,” “market created opportunity,” a trading edge based on market understanding. Many students attended courses on Market Profile analysis taught by Steidlmayer and his group, by James F. Dalton, and by others. Few of these attendees were floor traders; most were longer-term position traders. Few became successful profile traders. In retrospect, it appears that many expected too much. They wanted more than just an edge, they wanted a model to trade. Another dynamic governed day and position trader alike, a dynamic that makes it hard to become a winner on the basis of Market Profile analysis alone. That dynamic is the fact that markets are not day-to-day serially correlated. Today’s results are poor predictors of tomorrow’s action. There is a missing link.

Market understanding can come only from first understanding the market. And the market does not consist of one day’s trading. It consists of a number of days and depends on its “condition.” If the market is trending, its description will include all those days since the trend began. If it is in a trading range (bracketing), it can be described only by taking into account the activity since the trend ended. The missing link to market understanding is found within the data itself. All the relevant data must be used.

The Overlay Demand Curve™ integrates the data into a “super profile” that determines the market structure and identifies the market condition. The Overlay is the missing link.

Introduction

Futures trading remains one of the few places where an individual of modest means can attain riches, as Jack Schwager (1989) shows in his book *Market Wizards*. The secret is leverage. The leverage factor of a futures trade is 10 to 20; under current practice less than \$1,000 can control a 5,000-bushel wheat contract worth \$15,000 to \$20,000. A price movement of 10 cents per bushel for the trader can result in a 50 percent profit. If the price moves that amount against the trader, the loss is also 50 percent.

It is not unusual for the wheat market to move 10 cents within a few days, or even in a single day. Clearly, the large leverage can create extremely large profits quickly for the trader who is right, but most traders have found that it is not easy to be consistently right on the markets. In fact, most surveys show that up to 85 percent of traders are net losers.

It is not as surprising as it might seem that only 15 percent of traders are winners. Except for commissions, trading is a zero-sum game with 50 percent winners; add in commissions, and maybe the expectation is 40 percent winning. Then, skill also plays a role. Many public traders are ill prepared to compete with the professionals. They do not have access to the inside information and they do not have the market understanding that comes with years of experience. This book levels the playing field. Information directly from the markets, properly interpreted, can bring the public's market knowledge up to par with the professionals'. Now the public can compete head-to-head with the establishment and win its share of the time.

This book shows you how to understand the condition of a futures market to use the market's inherent leverage for trading at low risk. *Value Based Power Trading* will teach you how to determine a market's structure and condition, who the principal players are, and what they are doing. From market structure and condition you can find value, that group of prices that most market participants perceive as fair. Then you can readily identify prices that are too high or too low, prices that are away from value. You will know what market behavior is expected and quickly be able to detect the unexpected when it occurs. If you follow value and changes in value, you can control trading risk.

So the first part of this book's title is clear: "value based" market analysis is that form of technical market analysis that identifies value and value change. Risk control puts the "power" in *Value Based Power Trading*.

Your key to trading futures markets is knowing the important reference points. What is a reference point? It is a price, volume, or other variable that carries important information about a market or about a trading decision. Bracket limits, the prices that define a trading-range market (support and resistance levels) are reference points. If we are trading a 5-10-day moving average crossover model (as we do in an example in Chapter 2), the crossover price is the most important reference point for the model. A trader who is following a model that tells him or her to go long at 9527, with a stop-loss price of 9521 and a target of 9607, has three reference points for that trade. Reference points are an underlying theme throughout this book. If you know value, you can know the most important reference points. Then you understand your market and you know what to do at turning points.

This book integrates the earlier day-based Market Profile analysis into a comprehensive, short-term through long-term methodology. *Value Based Power Trading* is a radical departure from price-based technical analysis. The approach of this book in locating value in futures is in many ways a counterpart of Edwards and Magee's (1966) work on technical analysis of value in the stock market.

If the rise of technical market analysis in the 1970s represented a revolution in the thinking of futures traders, the conversion from price-based to value-based analysis is truly the second revolution.

History

Over the past 25 years, futures analysis has gone from primarily fundamental (long-term value) to technical (price-based), and, since 1984 (see CBOT 1984), to value-based (price-time). In the early 1970s, markets were slow-moving, risk was low, and the trader had time to get a "gut feel" for value. Grain analysts like Chester Keltner in Kansas City would tour the fields during the growing season and report on the crop in progress. These reports were eagerly awaited by the fundamentalist traders, as were the U.S. Department of Agriculture crop reports and the large traders' commitments.

Starting about the third quarter of 1972, and covering the next several years, world events began affecting the sleepy U.S. grains and metals markets. A civil war in Zaire and strikes in Chile put copper in short supply. An "el niño" weather condition in the Pacific damaged the already overfished and depleted anchovy crop, the world's largest source

of low-cost protein. The Russians had (another) crop failure and the Nixon administration sold them our surplus wheat (and some that was not surplus). Our wheat prices soared. Newspapers had a field day, reporting the Russian people eating \$0.25-per-loaf bread while ours ran up to \$1.00 or more. A coffee cartel became effective and another cartel, OPEC, began to affect oil and many other prices. And a fellow named Bunker Hunt began accumulating silver.

Technical Analysis: The Markets of 1972 and Later

The markets exploded. Fundamentals changed rapidly. "Gut feel" for fundamental value could not keep pace. Computers were becoming available, and Dunn and Hargitt had developed a futures database (from about 1963 forward, this was the original source for many others' databases). These data were "newspaper" daily summary data; open, high, low, close, volume, and open interest.

Dunn and Hargitt published a slim volume called *Trader's Notebook* (1970) in which several technical methods were examined and, in today's parlance, "optimized." They tested moving averages, reaction methods, the Keltner Minor Trend, and Donchian's Four-Week Method. Thus began modern technical analysis, primarily as an examination of price behavior. Unlike earlier, fundamental analysis, it was quick to measure price change. Market price levels were (implicitly) equated to value (price = value). A measure of the pace of the markets of the times, Dunn and Hargitt found that the best model used a four-week moving average and the second-best one used seven weeks.

Technical analysis with daily data continued to increase in popularity. Many successful trading techniques were found and reported. The Major Price Trend Directional Indicator, a linearly weighted moving average model, appeared in the second issue of *Commodities Magazine* (now *Futures*) in April 1972. It actually worked for most of the fourteen commodities listed in the report! Technical analysis still retains a large following. (The April 1993 *Futures* magazine featured a comprehensive list of providers of open, high, low, and close data, reproduced herein as Appendix C.) Anyone with a personal computer can collect daily summary data electronically for a few dollars per month and do their own research. Commercially available programs allow the individual to optimize trading methods over entire databases many years long.

Technical Analysis Today

Price-based methodology is not paying off as it once did. Market conditions have changed. The long price runs of past years are fewer and

farther between. Governments are regularly intervening in the currency and interest-rate markets, sometimes almost daily. Other governments intervene in the oil markets, coffee, copper, etc. There is more smart money traded by money-center banks and other financial institutions. Futures funds are large, sometimes swinging the markets. It is widely believed that outside trading money is now larger than the floor traders' capitalization, removing much of the floor's buffering capability. Information of all sorts is more readily available and disseminated faster. Local markets have worldwide impact and futures markets are popping up everywhere. All this shortens the mean time between value changes, making markets harder to track by price alone. As value changes come faster, the time frame for decisions becomes increasingly shorter.

The need for price-based technical analysis arose because of a speed-up of price change in the markets. Fundamental analysis could not keep pace with the changes. The then-recent availability to the public of main-frame computers accelerated the process. Today, much of price-based technical analysis is becoming obsolete because of still faster markets. Today, everyone has access to powerful computers; but, in a zero-sum game, not everyone can win. So the stage is set for the next advance, for value-based market analysis.

Value Based Power Trading: A Detective Story

Successful trading today requires more than just price analysis. The increasing complexity of the market argues for deeper analysis. Open, high, low, and close data give little detail within the day; one cannot even tell whether the day's high occurred before or after its low.

One way to increase the information is to break the day into parts; using half-hour "mini-days" isolates the trading into shorter time frames and narrower price ranges. Increasing the detail permits an analyst to identify the most popular prices, the ones the market trades most often.

Value can be understood as price over time. That is, value is located by volume: it is the price region to which the market continues to return over a period of time. Looking inside the day with half-hour samples facilitates the location of the popular price regions. Later on, we will examine various time frames, coming to the conclusion that half-hour periods are pretty good. The added detail (relative to daily data) permits an examination of price action at the price extremes. Price-based research treats all prices equally; value-based research identifies those prices that are more important to the market.

A start toward value-based analysis was made in 1984 when the Chicago Board of Trade began compiling the Market Profile and the

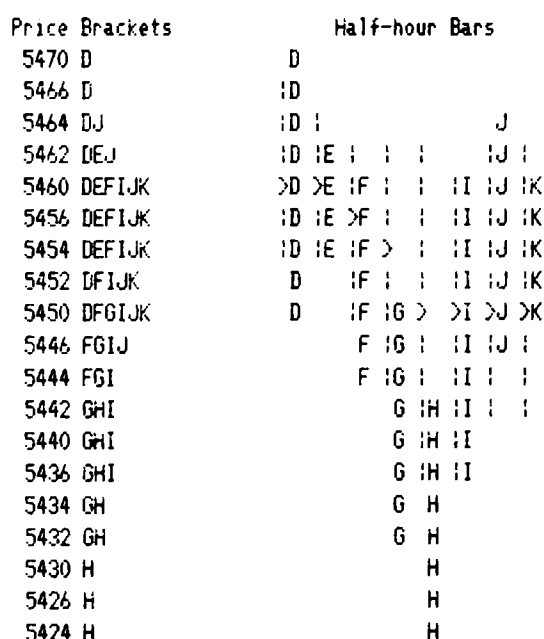
Liquidity Data Bank (LDB). Market Profiles are built by taking a day's half-hour bar chart and collapsing the trading onto the price axis. The result is a graphic, a curve that often looks like the familiar bell-shaped, or gaussian, distribution. This form of graphic provides a picture of market structure, in one or more distributions, and how the distribution(s) are interacting. Under stable market conditions, the distribution chart will show an upper price limit beyond which there are no more buyers, a lower limit beyond which there are no more sellers, and a heavily traded central region where most participants consider the price to be fair. Such a situation is shown in Figure I-1.

Market Profile™, A Trading Approach

The Market Profile was introduced in the *CBOT Market Profile Manual* (CBOT 1984), and augmented with analytical detail in *Markets and Market Logic* (Steidlmayer and Koy 1986), and "Taking the Data Forward" (Steidlmayer and Buyer 1986). From the beginning, the Market Profile was treated more as trading methodology than as merely a half-hour database with a novel and useful way of presenting a day's data, i.e., as a distribution. The concept was to use the profile, as it developed throughout the trading day, to find the market's emerging structure and to identify value. Profiles were interpreted by comparing them to a "normal" statistical distribution, the bell-shaped curve present in so many data situations.

Market Profile theory defined value (via the *value area*, the central 70 percent of trading volume) and explored the auction process as a way to understand futures markets. A series of concepts was developed to help measure and define the market's structure. There are balance areas, continuation, day types, price/value divergence, range extension, initial balances, responsive buying/selling, initiating buying/selling, time frame markets, and much more.

Day types were of particular interest to many traders; they defined market structure. Normal days had a very well defined bell shape, showing a balanced market; trend days had two or more distributions (e.g., a double distribution down day); and so forth, for each of five defined day types. CBOT (1984), Steidlmayer and Koy (1986), and Steidlmayer and Buyer (1986) each treated certain areas, but none of the publications had an index, so following ideas from text to text was difficult. The present author tied the three texts together in a review and applications guide (Jones 1988), which incorporated an index for all three, as well as definitions of terms and a collection of rules and observations.

Figure I-1. Market Profile and bars, November 1992 soybeans, August 21, 1992

The bar chart on the right identifies the trading by half-hourly period (D is 9:30 to 10 A.M., E is 10 to 10:30, etc.). This bar chart is a straightforward high-low database. The symbol **|** locates the "point of control," that price with the most half-hours traded; the symbol **>** defines the "value area," the region with 70 percent of the trading. On the left, the bar chart is collapsed into a time-price (symmetrical) distribution. This distribution is the Market Profile. The half-hourly breakdowns show that the high came in the first half-hour (D = 9:30 to 10) and the low was in H period (11:30 to 12 noon). The bulk of trading (70 percent) was in the range 5462 to 5442, the value area.

The basic concept in Market Profile analysis is to observe the trading early in a day and then to try to fit the data into an analytical picture (e.g., day type, any price rejection at the extremes). As the trading day proceeds, the trader is supposed to see which trading path to follow, whether *responsive* or *initiating*. "Responsive buying/selling" is a much-used concept throughout this text: It refers to the action taken when trading near price extremes in balanced markets. The responsive seller is active near the top of the (balanced) market, the responsive buyer, near the bottom. Initiating action is taken when the market becomes unbalanced, as when a trend starts.

Initially, Market Profile courses developed by J. Peter Steidlmayer were given at the Chicago Board of Trade. The trading rules and systematic

analysis became increasingly apparent to the CBOT. This caused concern that the CBOT might be perceived as promoting a trading approach instead of just generating data. Subsequently, the trading method part of the Market Profile was turned over to Steidlmayer, with the CBOT continuing to generate the data. Steidlmayer and a partner started Market Logic School. A system of market analysis based on profiles was taught by Market Logic School, and separately by Dalton Capital Management (Dalton, Jones, and Dalton 1990).

Hundreds of traders were drawn to these courses by the promise of learning how futures markets could be understood and mastered. The Dalton Group initiated a biweekly research report under the editorship of Eric T. Jones. These Profile Reports investigated all aspects of the Market Profile/ Liquidity Data Bank, providing an unparalleled breadth and depth of information on this database.

Students of Market Logic School and the Dalton group demonstrated a willingness to do the requisite homework and study to understand profile theory. Many students continued to have difficulty in applying it to the market. Our company, CISCO, had the impetus to encourage and help traders because we were a source of the CBOT data. We interviewed many traders who stopped buying our data because they could not make profile theory work satisfactorily. They reported two main problems: within the day, they were unable to project the day's action from the developing profile to its final form; and they were unsuccessful in predicting the next day's action from the previous day's profiles.

Liquidity Data Bank™, Volume Detail without Peer

An adjunct to the Market Profile is the Liquidity Data Bank, or LDB, an end-of-day report of cleared volume. A most important aspect of the LDB is its allocation of the traded volume at each price to the four classes of trader (floor member, commercial member, off-floor member, and the rest, the public). Profiles could be built in real time from a quote machine, while the LDB was available only well after the end of trading. Consequently, the Market Profile got most of the attention, although, as data vendors, we noted considerable interest in the LDB from professional traders.

While the Market Profile and the LDB gave a much clearer picture of each day's market activity than ever before, there was poor coupling to the next day's markets. That is, profile analysis did not do a good job of predicting continuation. Something was missing. There was all this comprehensive data, a well-developed theory and poor results. Very frustrating for the student . . .

The Watershed: No Day-to-Day Serial Correlation

At CISCO, we felt that a database with 10 or 20 times the information in the daily summary had to be useful for market analysis. We also believed in the utility of the Market Profile approach. Consequently, we developed an algorithm to calculate day types. Profile theory argued for the significance of day types in predicting continuation. We felt that, once we could generate day types under computer control, we could develop enough information to find statistically the conditions under which the day type(s) could predict continuation.

Our study was negative. Surprisingly, we found little or no correlation between day type and continuation. This point was the watershed in our research. It forced us to look outside Market Profile theory in our attempt to understand markets of longer time frame. It has long been known in futures research that markets have no day-to-day serial correlation (Labys and Granger 1970). That is to say, even in trending markets, the probability that the next day will be either up or down is about fifty-fifty. On a day basis, the market's normal fluctuation, the daily trading range, is much larger than any underlying trend, and hence hides it. Thus, it is clear that longer time frames are necessary to define the market's condition. This was the catalyst that led us to develop Value Based Power Trading.

The Missing Link, The Overlay Demand Curve™

Lacking day-to-day serial correlation, yesterday's profile should not be expected to predict today's market direction or its condition. But each day is a part of the greater whole. Whether a market is bracketing, i.e., in a trading range, or if it is trending, a number of days are required to define its condition. Within the bracket framework there can be considerable variability from day to day; but taken as a whole, a certain group of days defines the market. The individual profiles, or half-hour bars for one day, show how the market is valued by the traders on that day, reflecting the current conditions. The next day will have different "local" conditions, and hence the traders will value the market somewhat differently. In a nontrending market, the summation, i.e., the Overlay, of market activity over the period of stability defines the market. This gives the context of the market, the overall picture within which each day's activity can be interpreted. The Overlay Demand Curve is a graphic of longer-term market distribution, just as the Market Profile shows the distribution for one day. Without the overall picture, it is no wonder that students of the

profile have had trouble using profile theory for their longer-term, position trading.

Value Based Power Trading: The Trader Controls Risk

Overlay Demand Curves form the foundation of Value Based Power Trading. The Overlay provides the longer-term distribution, the market structure. Structure can be a single, well-developed, bell-shaped curve, several separate distributions more or less interfering, or a shape so chaotic that no sense can be made of it whatsoever. Understanding the structure leads to finding the market's condition (trending or bracketing or too volatile to read). The "bell" case denotes a bracketing market, which, it will be shown later, leads to locating value. In such a market, the reference points are unambiguous and the trader's way is clear.

Adding to the Overlay information are reference points from commercial traders, from the public's trading behavior, from the previous day's distribution, and from a variety of sources, detailed below. Once the market condition, value, and other reference points are found, the trader is in position to make low-risk trading decisions.

Traders and Their Reliance on Value

There are four general classes of traders. Floor traders make their living by going with the flow of orders on the floor. They provide liquidity, the grease that helps keep the market moving freely. Few floor traders pay much attention to value. They are "go with" people who typically use very short-term technical analyses to calculate reference points. A danger of being a "go with" trader lies in "getting with" the flow just before a major top or bottom. An understanding of value and the associated reference points could help the floor trader avoid the daily bear and bull traps.

Commercials are the businesspeople on the floor. They work for financial institutions, grain companies and the like. Each day they have business to transact on the floor, which they try to do at value. Because of their insight, they understand value better than anyone else on the floor. (For example, grain commercials know the prices for which their firms are buying and selling grain, and hence current value.) When prices deviate from value, the commercial can become a speculator, selling at high prices, buying if price is too low. Commercial traders are closely watched by the others on the floor. Commercial volume on the Liquidity Data Bank provides a second source, a second opinion to augment the information we get from the Overlays.

Off-floor members are those who trade from offices in the exchange or from the poolside in Florida or wherever they may be. They pay higher commissions than members on the floor and they lose the closeness to the action enjoyed on the floor. They need value for their trading because they must make more per trade than those on the floor.

The public is composed of three classes with differing time outlooks. Day traders, like those on the floor, trade on market action within the day. Unlike the scalper, the public day trader pays high commissions, and like the off-floor member suffers from time delay. This trader must know value to be able to trade effectively.

Position traders look to the longer term for larger profits. This class seeks to find breakouts from balanced markets. They must know value to avoid within-bracket trades that have little potential.

Swing traders are an amalgam of day and position traders. This group will take a short-term, low-risk position. If the trade works out, it may be held for several days. Like the public day traders, this group needs value in initiating their trades and in making hold/exit decisions.

The Chapters in Brief

This book develops Value Based Power Trading from the basic concept of value (price over time) to the final reference points that permit the reader to trade futures with minimum risk (the Power).

The beginning point in Chapter 1 is the data available. An understanding of this most basic of trading information, the data, is critical, if often unappreciated. Many market participants use data of various sorts from several sources without questioning applicability or validity. Even seasoned traders are often naive about data. Few realize that there are often disagreements between prices released by the exchange—CISCO prepares a daily report of mismatches between the daily summary highs and lows (newspaper data) and the Market Profile highs and lows from the exchange clearing house.

Chapter 2 provides an analysis of the Liquidity Data Bank volume and volume distribution. While LDB reports are for one day only and do not provide market continuation information, they are invaluable for showing what the commercial and other traders are doing. These data have many, many potential uses. We will detail three ways of calculating the commercial activity and explore the utility of each. Examples will be given of commercial capping creating resistance and support levels. Also, a case of commercial trend following is examined.

Hourly LDB data are covered in Chapter 3. They provide a cross link between the standard LDB analysis and the Overlay. By having the

volume data in real time, it is possible to make very short-term corrections, even for long-term trades. Market control by commercials is contrasted with market control by the public. Breakout analysis is made for (1) a case of public and commercial support, (2) public support only, and (3) an aborted breakout without either public or commercial support.

The next step, explored in Chapter 4, is to incorporate all the data into usable analytical tools: the Overlay Demand Curve, commercial trader activity reports, daily profile analyses, and the like. The fundamental building block is the Overlay Demand Curve. It gives the condition of the market, the starting place for all trading decisions: entry, management of a trade, and exit. If the market is bracketing, the day trader is prepared to trade responsively and the position trader is waiting for a breakout. If trending, the position trader will locate stop points, the day trader looks for pullbacks, and so on. Commercial trading can alter the interpretation of the Overlay when value changes suddenly. This can be monitored on an hourly basis for CBOT trading, using the hourly Liquidity Data Bank updates.

Chapter 5 is devoted to using Value Based Power Trading methodology, the application of Overlay information to real market trade selection. A screen of bracketing markets gives the bracket size and potential for the day trader. In trending markets, Overlay theory is used to limit risk and/or protect profits. Once potential trades are identified, they can be validated from commercial traders reference points; the Rotation Index™ for breakout alerts; Market Profile economic activity the previous day; technical analysis for potential turning points on moving averages, oscillators, and cycles; and any other methods or models the trader normally uses.

Chapter 6 addresses trade monitoring, the tracking of a trade underway. Again, reference points are the guide. They are developed as in Chapter 3 for the Overlay Demand Curve, the commercials, etc. In addition, there are considerations of money management and real-time trade monitoring. Availability permitting, the hourly LDB reports can play an integral part in trade monitoring.

Chapter 7 discusses the future of futures analyses. While this book is breaking new ground in market analysis, it is really just scratching the surface of what can be learned. We see an increasing reliance on sophisticated technical analysis. Value determination, 24-hour trading, pattern recognition, and money-flows analysis are the wave of the future.

1

Futures Data

"In the particular is contained the universal"

This chapter is about data and the utility of data for futures research. Before we look at the actual data, we must identify what we need; how the data will be used and how well conditioned the data are for our purpose. Data that are not right for a job will lead to costly errors. Our data should help us determine the market's structure: day structure from the Market Profile distribution, longer-term structure from the Overlay Demand Curve distribution.

Structure is a visual. It shows whether the market is well behaved, with a smooth distribution, or jagged and irregular. Half-hourly data have proven to be ideal for helping to determine market structure.

The market's condition is also found from the distribution of the profile. Condition is what the market is doing, the state it is in: *bracketing*, *trending*, or too volatile to tell. Markets forming a single bell-shaped distribution are usually bracketing, i.e., in a trading range. Trending markets have their own distinctive form, combining several separate distributions.

Reference Points

A market's structure and condition determine its amenability to analysis. A great deal of market information and understanding can be obtained from bracketing markets. Value and the two bracket limits are three of the most important reference points. Others, of sometimes crucial importance, come from analysis of commercial behavior on the Liquidity Data Bank™ reports, from daily profile analysis, and from the measurement of internal trends in a bracket; there are several beyond even these. The better the reference points are defined, the better the market understanding and the better our risk control.

There are two principal types of value: *day value* pertains only to the current trading day; *value* without the “day” modifier refers to longer-term, more general value. Day value is the value area in the Liquidity Data Bank, where value area actually has meaning only in balanced markets. Longer-term value is a similarly defined price (range) in a bracketing market and is harder to pin down in moving markets where value may lead or lag price. In either case, value is always a (limited) range of prices at any given time regardless of a market’s condition. When we set out to calculate value we quickly come to the realization that value is intimately tied to sampling rates.

Value

Value is the key factor in responsive trade selection for the day trader. In a stable, bracketing market, market-offered opportunity occurs when price moves away from value. Oddly enough, value is (implicitly) used by the position trader as well. The position trader, looking for breakouts, is betting that value is changing and that price will not return to the bracket. Position traders who are trading an ongoing trend are betting that price has not reached value and, hence, that the trend will continue.

Value is (1) A price (range) recognized as a fair estimate of monetary worth, arrived at via price reinforcement (sampling) over time. (2) The most frequently occurring price (region) within a period of price stability.

For example, tomatoes have cost \$1.70/lb. the last six weeks. Price over time implies value, so tomatoes are worth \$1.70/lb. Today at the market, tomatoes are \$0.90 per pound. A bargain? Maybe. Price has certainly dropped, but value may have also dropped. We cannot tell from this one sample. Our experience, our sampling time, is too short.

The average time frame sets the limits on the required sampling rate to detect change. A critical question is the time rate of change of the phenomenon being sampled. That is, how fast it is changing. In order to measure the change, we must sample at a rate high enough to define the phenomenon. We must have a number of samples while the change is occurring. A market that moves substantially within a day or two will have to be sampled a number of times per day to define the change. A too frequent sampling rate (say, every minute) loads us down with meaningless data. If the sample time is too long (say just once per day) we are not able to define the change.

If we checked the tomato prices at the supermarket 20 times a day, we would gain no more information than by checking once a day. Our high sampling rate yields no additional information. Nor if we sampled tomato prices every three months would we gain much knowledge about

the value of tomatoes, since we know from years of experience that the tomato value time frame is one to a few weeks.

Today's futures market time frame is now often in the range of 5 to 20 days. That is, prices change substantially within that length of time, on the average. Several years back the market's time frame was much longer, from one to several months. The change in average time frame has profound implications on technical market analysis.

Sampling Rates

The rise of technical analysis in the early 1970s was fueled by the newly emerging access to (mainframe) computers and the availability of daily summary data from the exchanges, published in newspapers. Later, the invention of the personal computer and the rise of data services put analytic capabilities in the hands of many traders. The sampling rate, thus, was daily, and adequate for the times.

Sampling the futures market of today once per day, however, is usually inadequate to detect significant changes soon enough to do anything about them. A market with a time frame as short as five days cannot be defined by daily sampling; the sampling rate must be high enough to get "inside" the market; five samples could not identify value. Many traders still use daily data because it is easy and cheap to acquire, and there is a great deal of software for processing this type of data.

At the other extreme, tick by tick sampling picks up mostly noise. The data are there, but each sample has a very small information content. The day trader who watches ticks is often misled by the random movement of the market. The increased sensitivity of more frequent samples is masked by the noise. . . the random fluctuations.

What is a reasonable sampling rate for futures? Daily is too seldom. Each tick is too frequent. How fast do the markets change? The market's rate of change determines how short or how long our measuring rate should be, but an actual, average rate of change is hard to measure.

Since we have the limits defined, a reasonable approach is to do *order of magnitude* estimates to zero in on the proper sampling rate. An order of magnitude is a factor of 10. If the whole day is too long, an order of magnitude less is one-tenth of a trading day, or about 30 minutes. If the tick-to-tick time is too short, we find an order of magnitude longer to be in the range of a few minutes. So, our best guess for a proper sampling rate is, without actual case studies, a few to 30 minutes.

Finding the ideal sampling rate that will gain the most knowledge about a market is still an open research problem. We know that we must define just what it is that we are looking for (not just value) and how to

measure it. We want to be able to see significant features as they develop, rather than, as on daily bar charts, after they are over. We need a sampling rate that shows adequate detail without being swamped by too much data. And we can be sure that the “best” sampling rate for a market that is undergoing rapid change is not the best for one that is moving slowly. So, for most real-world situations, we seek the sampling rate that works well for a broad range of market conditions. That need pushes us in the direction of somewhat less—rather than more—sensitivity, indicating a sampling rate at the upper end of the time scale, around 15 to 30 minutes.

Fortunately, there is an extensive 30-minute database going back five or six years. It is incorporated in the Market Profile™ of the CISC database and is available to CISC customers. This database is used to develop the Overlay Demand Curve™ as well as to identify value and the trading reference points associated with bracketing and trending markets.

Value, the Key

Value is the key to market understanding. If the market is stable, i.e., bracketing, value is a definable quantity derived from price over time. For bracketing markets where the sampling rate is adequate, value is the price (region) that wins the trading popularity contest.

Keep in mind that each bracket has a life that dates from the end of a trend or other nonbracket condition. Samples taken earlier will introduce error. A bracket’s life can be one day (the day the trend ends), or many days. In such a case, value is determinable only since the end of trend; but within that period the bracket parameters are defined and trading risk can be estimated.

For markets where price is not within a bracket, price and value usually do not coincide. If a trend is underway, price can first lead value, then value catches up or even passes price, then price again leads, and so on until the trend is over. Here too, value defines the market condition, although value is much less well defined. If there is no bracket and no trend, either value is shifting often and unexpectedly or there is no consensus on value. Such situations often exist if there is a preponderance of outside, noneconomic influences, as when central banks are intervening in the currency markets. Even in these cases, the absence of any sensible value tells much about the market condition.

Data Sources and Types

Futures data from actual trading are generated in two ways. Tick-by-tick information is sent from the trading floor as trades are made. Ticks are

the raw data, since they include the reported floor activity (a tick is recorded for each price change), some of which may not be confirmed at clearing. At the end of the day, settlements are posted by the exchange; these, together with the open, high, low, and previous day's volume and open interest, are reported as "exchange official." These are the prices reported on the business pages of *The Wall Street Journal* and other newspapers.

Later in the day, the clearing process of trade matching, or reconciliation, turns up mismatches and other sorts of error. The final result of the clearing process is that every trade is matched on both the long and short side. These data are then reported to the public by the Chicago Board of Trade as the Liquidity Data Bank (LDB) and by the Chicago Mercantile Exchange as Volume Data. Other exchanges do not publicly report reconciled trade information. LDB reports are extremely valuable to the trader. They contain actual trading volume at each price, and this volume is further broken down by the four types of trader involved (floor member, commercial, off-floor member, and all other). Incidentally, the actual cleared volume may be substantially different from the "exchange official." LDB data also contains a Market Profile™, showing the time (within half-hour periods) of the trade activity at each price. Profiles on the LDB are easily reduced to half-hour price bars.

Standard Data

Standard simply means multiple potential sources, guaranteeing a reliable supply. Most people only have access to standard data. If those data will not support the information needs of the job, their research project is doomed from the start.

The first step in technical research is collecting and understanding data. The proper data must be available and we must be able to use them. Availability can be a real problem; there are really only two standard types of data that are readily accessible.

The first type is the "official" daily exchange summary data: open, high, low, close, volume, and open interest. The day's open (sometimes split with a high and low), high, low, and settlement prices are released shortly after the close of trading. (The volume and open interest are those of the previous day.) These are the data that appear in *The Wall Street Journal* and other newspapers; the data can be purchased from a number of vendors. They are also delivered on many quote machines.

The other "standard" is the tick-by-tick time series from a quote machine, which is also available from several vendors. Ticker data is a

Figure 1-1. Daily trading data for soybeans, August 9, 1991, November 1991

Tick-by-Tick		One Minute Grouping					
TIME	PRICE	TIME	OPEN	HIGH	LOW	CLOSE	TICKS
09:30:48	5730	09:30	5730	5730	5730	5730	1
09:31:22	5734	09:31	5734	5740	5734	5740	2
:40	5740	09:32	5734	5740	5734	5734	3
09:32:32	5734	09:33	5730	5734	5724	5730	7
:46	5740	09:34	5734	5734	5730	5730	4
:53	5734	09:35	5734	5734	5720	5720	6
09:33:06	5730	09:36	5714	5724	5714	5724	7
:16	5724	09:37	5720	5730	5720	5724	6
:18	5730	09:38	5730	5730	5730	5730	1
:34	5724	09:39	5730	5730	5720	5720	3
:43	5730	09:40	5724	5730	5720	5730	8
:46	5724	09:41	5724	5724	5720	5720	5
:59	5730	09:42	5722	5730	5720	5720	5
09:34:34	5734	09:43	5724	5730	5724	5724	4
:42	5730	09:44	5734	5734	5730	5734	5
:50	5734						
:54	5730						
09:35:12	5734	Thirty Minute Grouping					
:18	5730	TIME	OPEN	HIGH	LOW	CLOSE	TICKS
:21	5734	09:30	5730	5744	5714	5744	131
:32	5730	10:00	5742	5750	5724	5746	110
:45	5724	10:30	5744	5754	5740	5742	58
:55	5720	11:00	5740	5746	5732	5732	59
09:36:05	5714	11:30	5734	5734	5720	5730	67
:08	5720	12:00	5726	5740	5722	5734	46
:16	5724	12:30	5736	5736	5710	5716	152
:19	5720	13:00	5714	5730	5700	5704	104
:29	5724						
:32	5720						
:51	5724						
09:37:08	5720	Entire Day Grouping					
:11	5724	TIME	OPEN	HIGH	LOW	CLOSE	TICKS
:12	5720	09:30	5730	5754	5700	5704	727
:27	5724						
:41	5730						
:58	5724						
09:38:18	5730						
:37	5724						
:55	5730						

Left column; ticks as received; top right, one-minute grouping; middle right, thirty-minute grouping; bottom right, entire day. There were 727 ticks this day (ticks occur with price change).

standard because of its availability in computer-ready format for processing.

Monitor Addiction

On-line quote devices are everywhere. Powerful analytical programs take the quotes and form them into all sorts of data structures; one-minute charts, oscillators, moving averages, and many, many more. Most of the displays are in color and the resulting graphs are striking. It is easy to get addicted to such devices, but they do not make it any less difficult to select profitable trades. The feeling that watching every tick keeps one abreast of a market is, for most of us, an illusion. Our minds integrate these mostly random price movements into structures we believe at the time to be meaningful. In the discussion below on sampling rates, we conclude that there is a minimum average time, on the order of minutes, that it takes a market to generate stable information.

Nonstandard Data

Nonstandard data are so called because of their lack of general availability for history, for daily updates, or for both. The types we cover will likely become the standards of the future because they carry more and/or better information about the markets than the current two standards.

Market Profile

Market Profile is a way to organize the data over time. It was defined in Steidlmayer and Koy (1986) as “price activity recorded in relation to time in a bell-shaped curve.” The graphic was developed at the Chicago Board of Trade in 1984. Market Profile uses half-hour data bars as primary input, keeping track of the time at each price tick.

An example of the raw data is the 30-minute grouping in Figure I-1. Each price traded in each half-hour period is counted as an “event.” There can be only one event at a given price per half-hour. One trade or many at that price within that half-hour is still a single event. Events are called TPOs in Market Profile analysis nomenclature, where TPO stands for “Time Price Opportunity” (or “That Price Occurred”). A graphic is formed by collecting the events (TPOs) and plotting on a vertical price axis (see Figure I-1 in the Introduction).

Balanced trading days show very little trading near the highest and lowest prices, quite a lot in the middle—hence trading is distributed into a bell-shaped curve (see Figure 1-2, left side). The bell reflects a short-term (day) balance in the market. As the bell forms, the trader locates value (for that day). Then, day trades become attractive when price

Figure 1-2. TPO data for November 1992 soybeans, August 21, 1992

TRADING DATE: 21 AUG 92 CONTRACT: NOV 92 SOYBEANS (CBOT) (S X)

TRADING BEGINS 0930 (CST); CLOSES 1315; TPO SYMBOLS ARE DEFGHIJK
FIRST PERIOD IS 30MINS; SUBSEQUENT PERIODS ARE ALL 30 MINS

	D	E	F	G	H	I	J	K
5470 D	1							
5466 D	2							
5464 DJ	11						1	
5462 DEJ	17	7					5	
5460 DEFIJK	30	10	2			4	13	4
5456 DEFIJK	35	14	8			6	16	15
5454 DEFIJK	43	12	7			7	11	17
5452 DFIJK	35		3			8	8	12
5450 DFGIJK	9		2	3		6	6	4
5446 FGIJ			2	11		11	2	
5444 FGI			3	13		11		
5442 GHI				11	1	6		
5440 GHI				10	9	4		
5436 GHI				7	23	1		
5434 GH				8	26			
5432 GH				5	17			
5430 H					14			
5426 H					11			
5424 H					4			

This figure is similar to Figure I-1 except that the half-hourly bars show the number of ticks at each TPO. TPOs are represented by the number of ticks for that half-hour.

moves away from value. A number of quote-machine monitor programs can generate profiles, but history and daily update services are scarce.

Yet a third type of nonstandard data base is embedded in the Market Profile. The half-hour data bars used for the TPO distributions can as well be used to create a high-low database. The period's opening and closing prices are not carried. But, for many purposes, the half-hourly range alone is adequate. Figure I-1 shows half-hour bars using the TPO letters, Figure 1-2 is the same day, same contract, posted in ticks.

Five-Minute Data

Between tick-by-tick and daily high-low, the profile data offer a middle ground. But we may need a finer subdivision of time. At CISCO we began collecting five-minute "bar chart" data in October 1991. Again,

Figure 1-3. Five-minute data for March 1993 T-bonds, day, January 20, 1993

U20393	930120	0720	10603	10604	10602	10603	35
U20393	930120	0725	10604	10605	10530	10530	27
U20393	930120	0730	10531	10600	10528	10528	42
U20393	930120	0735	10529	10529	10525	10528	24
U20393	930120	0740	10529	10531	10528	10529	29
U20393	930120	0745	10530	10530	10528	10530	17
U20393	930120	0750	10529	10530	10527	10529	19
U20393	930120	0755	10530	10600	10529	10531	22
U20393	930120	0800	10600	10600	10529	10600	23
U20393	930120	0805	10531	10603	10531	10601	31
U20393	930120	0810	10602	10602	10600	10601	14
U20393	930120	0815	10600	10603	10531	10531	13
U20393	930120	0820	10600	10603	10531	10602	17
U20393	930120	0825	10601	10602	10600	10600	18
U20393	930120	0830	10531	10601	10531	10601	7

The first hour and fifteen minutes are shown: Column 1 is the future identification, column 2 is the date, column 3 is time, columns 4, 5, 6, and 7 are the first price of the period, the high, the low, and the last price of the period, respectively. Column 8 is the ticks.

anyone with a quote machine could generate such data, but it is not generally available commercially.

Liquidity Data Bank

LDB reports come in three parts, the Volume Summary, the TPO Analysis, and the Futures Summary. The Volume Summary includes a Market Profile and the actual volume of trading at each price, broken down by the volume percentage of each of (1) floor members (Cti1), (2) commercial clearing members (Cti2), (3) members filling orders for other members (Cti3), and (4) members filling orders for all others (public and other types of traders) (Cti4). Also included are the "value area," defined as the price range that encompasses the central 70 percent of the trading volume and the total volume with Cti breakdowns. The TPO analysis table counts TPOs and locates them with reference to the center of value, calculates the TPO value area, and finds the Trade Facilitation Factor (TPOs divided by the number of prices). The third part, the Futures Summary, lists the trading at the open, high, low, and close, the volume by type, and the related TPOs; with the same being done for the quadrants (the day's price range divided by four). An LDB report is shown in Figure 1-4. LDB data are covered in detail in Dalton, Jones, and Dalton (1990) and Jones (1991c), as well as in Chapter 2 of this volume.

Figure 1-4. Liquidity Data Bank (LDB) report for December 1989 soybeans, November 8, 1989

CHICAGO BOARD OF TRADE

LIQUIDITY DATA BANK* REPORT

VOLUME/FUTURES SUMMARY REPORT FOR 11 08 89

COMMODITY -- T-BOND (CBOT) DAY DEC 89

Volume Summary

Price	Volume	%Vol	%Cti1	%Cti2	%Cti3	%Cti4	Brackets	
9928	828	0.2	50.0	0.0	0.0	50.0	L	
9927	10242	2.4	49.4	11.9	3.4	35.3	ILM	
9926	25762	6.0	55.0	16.7	3.8	24.4	DHILM	
9925	36772	8.6	59.6	14.0	4.9	21.4	CDFHIKL	
9924	50508	11.7	56.5	14.1	6.8	22.5	CDEFGHIJKL	
9923	68680	16.0	56.5	13.6	8.1	21.8	CDEFGHIJKL	
9922	40014	9.3	56.7	14.7	6.7	21.9	CDEFGHIJK	
9921	21430	5.0	62.4	12.9	5.6	19.1	ZCDEFGHIJK	
9920	30526	7.1	57.1	13.8	6.4	22.7	Z\$BCFGJ	
9919	21980	5.1	63.5	13.3	6.1	17.1	Z\$BCG	
9918	17544	4.1	59.2	12.1	6.2	22.6	Z\$ABC	
9917	36910	8.6	63.0	10.8	6.7	19.5	Z\$AB	
9916	30818	7.2	61.3	15.7	6.1	16.9	Z\$AB	
9915	24146	5.6	61.7	13.5	4.4	20.4	\$AB	
9914	12734	3.0	59.7	13.0	5.2	22.1	\$A	
9913	1124	0.3	45.6	9.5	14.2	30.7	A	
70%	9925	324364	75.4	58.7	13.4	6.6	21.2	ABCDEFGHIJKLZ\$
V-A	9917							

		%Cti1	%Cti2	%Cti3	%Cti4	
Volume for T-BOND (CBOT) DAY	DEC 89	430018	58.6	13.7	6.2	21.5
Volume for all T-BOND (CBOT) DAY		461886	58.3	13.8	6.4	21.5

TPO Analysis

CENTER 9923

VALUE AREA FROM TPOS

UPPER 9926

LOWER 9919

TPOS UPPER 25

TPOS LOWER 46

TPO TOTAL 83

TICKS (STEPS) 16

TF FACTOR 5.2

Futures Summary

OPEN	9916	85272	19.8	61.6	12.8	6.4	19.2	ABCZ\$
	9918							
HIGH	9928	828	0.2	50.0	0.0	0.0	50.0	L
LOW	9913	1124	0.3	45.6	9.5	14.2	30.7	A
CLOSE	9927	36004	8.4	53.4	15.4	3.7	27.5	DHILM
	9926							

Quadrants

QD 1	9928	73604	17.1	56.5	14.5	4.3	24.7	CDFHIKLM
	9925							
QD 2	9924	180632	42.0	57.3	13.9	7.1	21.7	CDEFGHIJKLZ
	9921							
QD 3	9920	106960	24.9	60.8	12.4	6.4	20.4	ABCFGJZ\$
	9917							
QD 4	9916	68822	16.0	60.9	14.3	5.4	19.3	ABZ\$
	9913							

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The three parts of an LDB report.

1. *Volume Summary* (CBOT and CME). For each price traded there is:
 Volume, (each side of the trade is counted),
 %VOL The percentage that volume is of the day's total,
 %CTI1 The percentage traded by floor members (locals),
 %CTI2 Trading percentage of commercials,
 %CTI3 Trading percentage of off-floor members,
 %CTI4 Percentage of trading by public and others,
 BRACKETS Half-hour periods (TPOs) when that price traded.
2. *TPO Analysis*. Calculated by CISCO on CBOT and CME.
 TPOs are used to estimate the value area, to find the upper and lower activity counts, and to calculate the CISCO Trade Facilitation Factor

(ratio of total TPOs to ticks [steps]). These data provide a quick measure of buying/selling pressure and whether the market is facilitating trade. CISCO has published research on the validity of TPO value areas, finding that they are an adequate substitute for volume-based ones. For non-CBOT profiles, TPO analysis is all we have. Of course, during the day, TPO analysis is very useful.

3. *Futures Summary.* Futures summary data is released only by the CBOT. It shows the trading at the open, close, high, and low and within the four price quadrants. These data help in the evaluation of the market's response at those various price levels and shows which market participants are active at each point.

Hourly LDB Reports

The Chicago Board of Trade is now releasing within-day clearing, as the trading is reconciled. Included are the total volume at each price, Cti1, 2, 3, 4 volumes at each price, and the Market Profile™; i.e., the LDB Volume Summary. Release times are approximately hourly, starting just before 9:00 A.M. and ending around 6:00 P.M. There are eight releases in all.

Hourly LDB data represent the first case ever of actual volume becoming available during the trading day. The trader can follow volume changes as they are cleared, tracking demand as it varies with price throughout the day. An example of an hourly appears in Figure 1-5.

A Brief Study of Sampling Rates: Daily, Hourly, 30-Minute, and 15-Minute

Our discussion of value led us to the question of optimum sampling rates. We noted that tick-by-tick data sampled too frequently, daily summary data too seldom. Our rough estimate was that somewhere around 30 minutes might be "just fine." We will use daily summary (open, high, low, and close: O, H, L, C) data and the new five-minute database currently under development at CISCO to test the effect of various sampling rates on simple trading models. Our study is made from the standpoint of the position trader, not the highly active day trader. The most profitable results are considered best as long as they meet certain prior conditions, e.g., not fewer than six trades per year.

Two cases are examined. In the first case, daily summary and half-hourly data are used to "trade" an unusually volatile three-week period in soybeans. This is a classic case in which standard moving average methods are at risk. In the second case, we look at approximately one

Figure 1-5. Hourly LDB data for March 1993 T-bonds, 10:08 A.M., January 7, 1993

For downlead number 2 which occurred at 10:08 :

CBOT VOLUME REPORT

TRADING DATE: 01 07 93

CONTRACT: MAR 93 US T BOND (CBOT) DAY

TRADING BEGINS 0720 (CST);CLOSES 1405;TPO SYMBOLS ARE Z\$ABCDEFGHIJKLM
FIRST PERIOD IS 10 MINS;SUBSEQUENT PERIODS ARE ALL 30 MINS

PRICE VOLUME %VOL %CT11 %CT12 %CT13 %CT14 BRACKETS(*)

10509	197	0.2	29.4	0.0	1.0	69.5	Z
10508	4136	4.5	48.7	11.9	1.3	38.2	Z
10507	6903	7.5	57.7	9.4	5.5	27.4	Z
10505	4846	5.3	59.3	5.5	1.1	34.1	\$A
10504	15244	16.6	58.0	12.5	2.4	27.2	\$AB
10503	24938	27.1	61.7	13.5	1.8	23.0	\$AB
10502	23928	26.0	59.9	14.4	2.8	23.0	\$AB
10501	10326	11.2	57.3	12.0	3.1	27.6	\$AB
10500	1386	1.5	52.7	0.4	0.1	46.8	\$B
10431	2	0.0	50.0	0.0	0.0	50.0	B
10430	14	0.0	50.0	0.0	21.4	28.6	B
10429	6	0.0	50.0	0.0	50.0	0.0	B
10428	40	0.0	50.0	0.0	0.0	50.0	B
10427	16	0.0	50.0	0.0	0.0	50.0	B
10426	14	0.0	85.7	0.0	0.0	14.3	BC
10425	8	0.0	50.0	0.0	12.5	37.5	BCD
10424	8	0.0	75.0	25.0	0.0	0.0	BCDE

%CT11 %CT12 %CT13 %CT14

VOLUME FOR MAR 93 US T BOND (CBOT) DAY	92012	58.9	12.4	2.5	26.3
VOLUME FOR ALL US T BOND (CBOT) DAY	95742	58.8	12.3	2.5	26.3

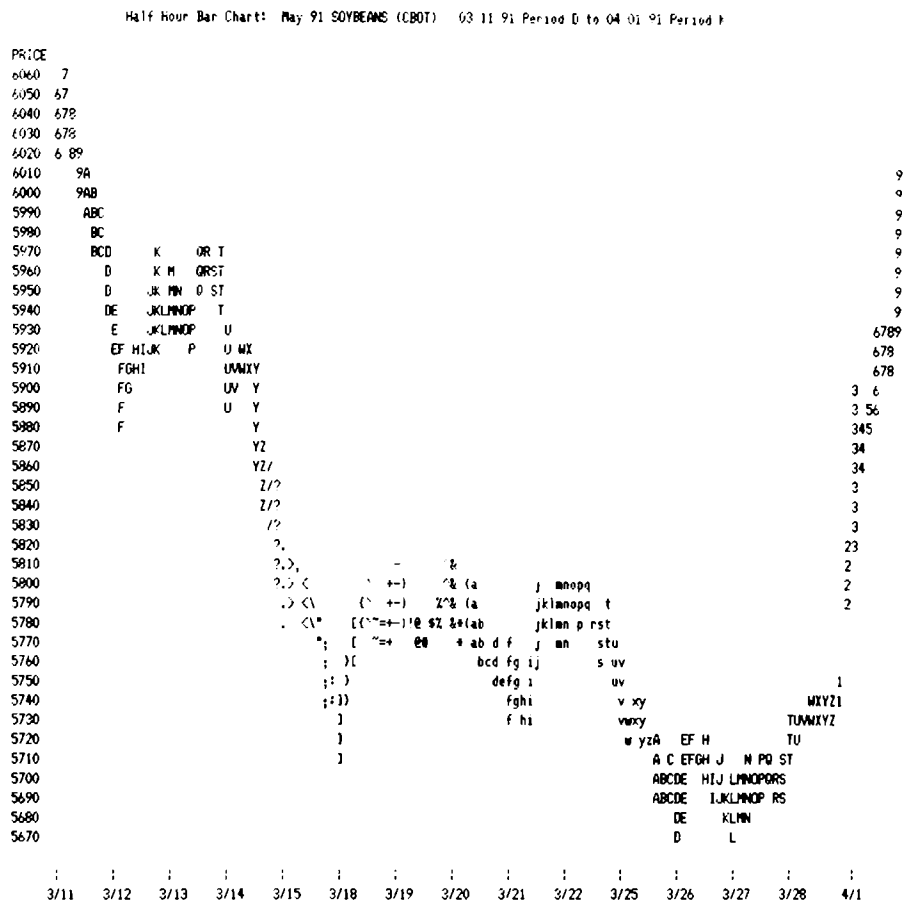
70% VOLUME SUMMARY

PRICE VOLUME %VOL %CT11 %CT12 %CT13 %CT14 BRACKETS

10505	79282	86.2	59.7	12.9	2.3	25.1	\$AB
10501							

The market opened at 7:20, traded between 10509 and 10507 the first ten minutes (Z period), ranged from 10505 to 10500 the next thirty minutes (\$ period), and stayed between 10505 and 10501 from 8:00 to 8:30. This forms the "initial balance," 10509 to 10500, the distribution attributed to the day traders. Breakout from the initial balance occurred during B period, moving down rapidly to 10424. The surge down was led by the Cti4 traders, the public. At the breakout, 10431, only the public was active, with the floor (Cti1) filling their trades; and also at 10428 and 10427. No commercials (Cti2) entered until 10424.

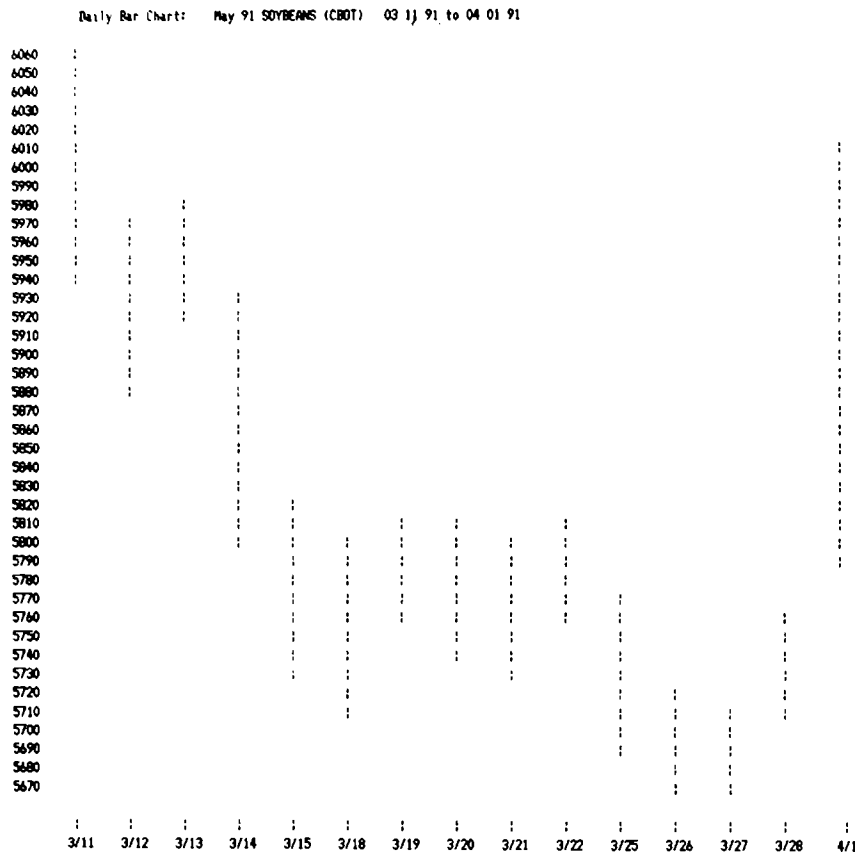
Figure 1-6. Half-hour trading periods of May 1991 soybeans from March 11, 1991, through April 1, 1991



Each day is composed of eight periods. Symbols are modified in order to distinguish days. Dates at the bottom of the display identify the day distinctions. On the extreme right, the column with the 9s is for the final trading period of April 1, 1:00 to 1:15 P.M. Period 8 covers 12:30 to 1:00 P.M., and so on, back in time to the first column on the left, where the 6 refers to 9:30 to 10:00 A.M. on March 11. The unique symbols permit any time to be located easily. The date line on the bottom identifies the first half-hour period of each day with the symbol "J".

year of data on live cattle and soybeans. There, four time periods are used; daily, hourly, half-hourly, and every fifteen minutes. In both cases, the results are preliminary because of the relatively short time periods and limited number of examples covered. Within that constraint, however, it is shown that (1) half-hour data is substantially better for trading than daily, (2) the best sampling rate may lie between one-half and one hour, and (3) improved sampling rates can more than double returns.

Figure 1-7. Full-day trading periods of May 1991 soybeans from March 11, 1991, through April 1, 1991



Case 1. Trading Comparison, Three Weeks

Let us start with the particularly difficult period in soybeans. Daily and half-hourly sampling rates will be contrasted. Figure 1-6 is a half-hourly bar chart (segmented cumulative TPO profile) of the May 1991 contract, running from March 11 through April 1, 1991. A different symbol is used for each half-hour, making it possible to identify each of the eight periods each day. The added detail is directly contrasted with the daily bar chart of the same period (Figure 1-7). The large amount of smoothing that occurs by lumping entire days is very apparent in the March 12-13 and March 20-21 trading and at the lows on March 26-27.

It is assumed that the models enter the test on March 11 with the position they held as of the close the previous day. Exit is assumed at the

close of April 1. For the half-hourly data, its position was initially long; the first reversal occurred in period 7 (12:30 to 1:00 P.M.) of the first day (loss of 3.75 = \$187.50). That short was reversed to long in period 7 of March 13, and so on until the exit on April 1. In all there were nine trades for a 20-cent (\$1,000) gain (excluding slip and commissions).

The daily data of Figure 1-6 had only two trades for a loss of 56.5 cents (-\$2,825). Clearly, the increased sensitivity from subdividing the day into eight parts was beneficial in this test.

It is possible to compare the two data sets in Figures 1-6 and 1-7 statistically, e.g., mean deviations and so on, but that is not what we need. We know the distributions are different, but what do the differences mean in terms of responsiveness to a trading model? The structure of trading rules adds another dimension of complexity, one which we deal with by selecting an extremely simple model. Our choice is a 5-point moving average crossing a 20-point moving average. (With daily data, 5 points means 5 days; for half-hourly data, 5 points is 2.5 hours.) When the shorter crosses above the longer, a "long" position is triggered. That long is held until the shorter average crosses below the longer, causing a reversal to a "short" position, and so on. A second test is made using a 5-point average compared to a 10-point average. Results of both cases are shown in Tables 1-1 and 1-2.

An attempt was made to increase the responsiveness of the daily data by using a shorter long-term moving average, a 5, 10 day pair. This improved the result to a loss of 16.5 cents (-\$825), still with just two trades. The like situation on the half-hourly data increased profitability to 42 cents (\$2,100) on an additional five trades. The comparisons:

	5/20	5/10
Daily	-56.5/2 -\$1,412/trade	-16.5/2 -\$410/trade
Half-hourly	20/9 \$110/trade	42/13 \$161/trade

In this limited test of an extremely volatile market, the increased sensitivity of the half-hour data is overpowering. The test does raise the possibility that price-based models may have a future for analyzing data with more sensitivity.

Case 2. Trading Comparison, One Year

A longer, more controlled study measures effectiveness by the well-known Keltner channelized model, in which a moving average is calculated using the high, low, and close prices. At the same time, the "true"

high-low range is found for the same moving average period. (True range is the maximum of: high minus low, high minus the previous close, or previous close minus the low.) The true range is added to the moving average to get the upper channel, and subtracted from the moving average to get the lower channel. In its simplest form, the model goes long when price breaks above the upper channel and stays long until price falls below the lower channel, whereupon it reverses to short. The length of the moving average usually exerts a substantial control over the frequency of trading and the profitability. Locating the most profitable moving average is called optimization.

Our tests use a Keltner model modified for stops. Instead of reversing at the opposite channel, the modified model exits when price crosses the channel centerline, the moving average line. When out of the market, the next trade is taken as price breaks outside the channel. Again, there is the possibility of optimization, which we address by merely looking for the best case (most profitable trading), as long as there are at least six trades. In this way, comparisons can be made between different data sets, as long as they cover the same chronological times.

Table 1-1. Return per trade for live cattle, by sampling rate (1.00 = \$400)

Live Cattle					
Type	Return/Tde	W/L	Lines	Mov Avg	\$Total
DS	0.33	2/4		60	792
60 min	0.59	7/13	50	(12)	4,720
30 min	0.40	11/19	100	(11)	4,800
15 min	0.15	10/26	250	(13)	2,160

W is winning trades, L is losing trades; Lines is the average number of lines in the moving average (for daily data 1 line is 1 day, for hourly data 1 line is 1 hour, and so on); Mov Avg is the number of days covered, with () being approximate based on the number of periods in a day.

Table 1-2. Return per trade for soybeans, by sampling rate (1.00 = \$50)

Soybeans					
Type	Return/Tde	W/L	Lines	Mov Avg	\$Total
DS	8.87	6/1		65	3,104
60 min	15.70	4/2	260	(65)	4,710
30 min	14.48	4/3	525	(58)	5,006
15 min	10.99	4/5	1000	(55)	4,945

The data cover the period from approximately January 1 through November 13, 1992. Sampling rates are daily (standard open, high, low,

and close), hourly, half-hourly, and every fifteen minutes. A continuous string of data is developed by spread joining the new front months to the old at rollover time. This procedure is explained in Jones and Strahm (1983).

Results from Tables 1-1 and 1-2 tend to confirm that breaking the day down into periods improves trading results. In the live cattle the optimum appears to lie between 60 and 30 minutes, with the optimum return about six times that of daily data. Soybeans also have an optimum around 60 to 30 minutes. Gain at the optimum periodicity is nearly twice the daily rate's gain.

Sampling Rate Conclusions

Any position trader should be aware that information within the day could be very useful in managing trades. Until better data are readily available, the trader might use databases of half-hourly data (Market Profile) to help in managing trades. If, in fact, these preliminary studies are verified on the markets as a whole, the potential of doubling (or better) one's return becomes a powerful driving force for moving toward the more complicated and difficult analyses required by increasing the sampling rate from daily to fractions of a day. There are a number of systems that filter data from a ticker, allowing traders to set time frames as desired. These systems are only useful, however, if the proper time frames are known. Otherwise, the trader is merely guessing.

Table 1-3. Interest rate forecasting success rates of leading economists, six months out

Interest Rate Forecasts of Leading Economists

		Predicted	Actual	Right	Wrong
1984	Jan	Slight Drop	Rise		x
	Jul	Rise	Drop		x
1985	Jan	Rise	Drop		x
	Jul	Slight Rise	Slight Drop		x
1986	Jan	Slight Drop	Large Drop		x
	Jul	Stable	Slight Drop		x
1987	Jan	Drop	Rise		x
	Jul	Stable	Large Rise, Then Drop		x
1988	Jan	Drop	Slight Rise		x
	Jul	Rise	Rise	x	
1989	Jan	Rise	Large Drop		x

Compiled by *The Wall Street Journal*. There is one correct forecast out of eleven chances.

Market Understanding or Forecasting?

In an article 20 years ago, the author (Jones 1974a) said "What we are seeking is a method that tells us when to buy and when to sell with a reasonable probability of success," and later, "We feel that defining trends is a proper sphere of activity for the researcher" (Jones 1974b). The latter quote can be updated to: "defining market condition (both trending and bracketing) is the proper sphere of activity for the researcher or trader." Note the absence of "forecasting" in this commentary. We would all be delighted if we could know tomorrow's prices, so why is forecasting missing? Could it be that that is asking too much of our data?

Forecasting of events to come fascinates us. There is an element in human nature that makes us want to believe that the future can be divined. Apocalyptic writings of all sorts are avidly sought, whether Nostradamus or astrologers or economists or market prognosticators. All have one thing in common: Their predictions do not stand the test of time. *The Wall Street Journal* has a regular feature in which the experts' market calls are compared to random selections ("a dart board"). We are not surprised that the dart board does as well as the experts. A report in the *Babson Staff Letter*, published by the David L. Babson & Co., investment managers, says in part, "We have frequently emphasized the folly of attempting to "predict" future moves in stock prices, except for the secular, long-term trend, which has been upward for over a century. Despite the clear lesson of history that stock market forecasting is nothing but a guessing game, thousands of investors, professional and amateur, still try to do it. The same is true of the bond market. . . ." The Babson report carried a historical study of forecasts of leading economists, taken from the semi-annual *Wall Street Journal* survey and shown here as Table 1-3.

A recent article in *The Wall Street Journal* (January 21, 1993) reconfirms Table 1-1. The subtitle is "Going against Economists' Views on Rates Would Have Paid Off," and reports an updated 5 rights and 17 wrongs on economists' semi-annual yields predictions. J. K. Galbraith was quoted as saying "We have two classes of forecasters: Those who don't know, and those who don't know they don't know." You are right on target if you have come to the conclusion that we do not expect our data to forecast the market.

Serial Correlation in Futures Markets

The lack of day-to-day serial correlation in auction markets is often the starting point for random market theory. Studies as early as Labys and

Table 1-4. Periodicities in November 1991 soybeans, 1990–1991

DATE	PEAK	VALLEY	CAL	DY	MKT	DY
8/ 3/90		612.50		39		28
8/24/90	645.00			60		43
11/20/90		601.50		148		104
12/12/90	631.00			170		119
1/14/91		590.50		203		140
3/ 6/91	638.50			254	176	<== Start
3/27/91		598.50		275		191
4/ 3/91	633.00			282		195
5/14/91		579.00		323		224
5/24/91	600.00			333		232
7/10/91		517.00		380	263	<== End
8/ 2/91	650.00			403		280
8/19/91		529.00		420		291
9/20/91	618.00			452		314
10/28/91		539.00		490		340

Listed are: Date, peaks, valleys, calendar day number, and market or trading day number.

Granger (1970) confirm the day-to-day randomness. Even in trending markets, the expectation of up price or down price for the next day is still about 50-50. Even odds in nontrending markets is easy to understand; in trending ones it is not so obvious. A market that is trending up or down does have an enhanced probability in the trend direction; it is just pretty well masked by the random component that is always present. For example, a trend of one cent per day (on average) is virtually lost in the average daily trading range of, say, ten cents. By grouping, however, the random component can be averaged out and the underlying price movement can be seen. We will illustrate this point with a trend in soybeans.

Selecting a Trend Period

The periodicity in a run of data is determined by locating peaks and valleys and dividing the length of time by the number of peaks. The number of peaks in a particular number of days depends in part on the number of days permitted between peaks—a minimum of 7 days peak-to-peak looks for short cycles (many peaks), while 20 days peak-to-peak gives a longer cycle (fewer peaks). The 20-day periodicities in the November 1991 soybeans gives the results in Table 1-4.

Table 1-5. Days of delay vs. gains and losses during a downtrend

DATE	CLOSE	VOL	INT	1DY	2DY	3DY	4DY	5DY
3/ 6/91	630.25	21165	84705					
3/ 7/91	629.50	19750	87610	L				
3/ 8/91	637.50	16775	86680	H	H			
3/11/91	626.00	17615	85550	L	L	L		
3/12/91	626.75	31720	88360	H	L	L	L	
3/13/91	627.25	13880	88910	L	H	L	L	L
3/14/91	616.00	24185	89935	L	L	L	L	L
3/15/91	609.25	25350	89435	L	L	L	L	L
3/18/91	612.00	25745	88470	H	L	L	L	L
3/19/91	611.00	14710	88720	L	H	L	L	L
3/20/91	607.25	10460	86835	L	L	L	L	L
3/21/91	610.50	15150	84455	H	L	L	H	L
3/22/91	608.00	9185	85440	L	H	L	L	L
3/25/91	601.75	20980	84950	L	L	L	L	L
3/26/91	599.75	20125	86655	L	L	L	L	L
3/27/91	603.25	8485	85815	H	H	L	L	L
3/28/91	608.25	9145	85195	H	H	H	H	L
4/ 1/91	630.50	34225	87900	H	H	H	H	H
4/ 2/91	627.50	23065	90925	L	L	H	H	H
4/ 3/91	623.00	18360	92945	L	L	H	H	H
4/ 4/91	618.25	24890	91905	L	L	L	H	H
4/ 5/91	621.00	13155	94250	H	H	L	L	L
4/ 8/91	622.50	14010	94250	H	H	L	L	L
4/ 9/91	614.00	19530	96255	L	L	L	L	L
4/10/91	617.75	13155	96920	H	L	L	L	L
4/11/91	618.00	22665	97520	H	H	L	L	L
4/12/91	618.00	15455	97600	-	H	H	L	L
4/15/91	615.25	11865	97635	L	L	L	H	L
4/16/91	619.00	13585	97990	H	H	H	H	H
4/17/91	612.00	23205	101200	L	L	L	L	L
4/18/91	612.25	16425	100930	H	L	L	L	L
4/19/91	621.25	22950	102175	H	H	H	H	H
4/22/91	614.75	31585	103885	L	H	H	L	L
4/23/91	622.25	26495	105580	H	H	H	H	H
4/24/91	621.25	29580	107845	L	H	-	H	H
4/25/91	619.00	18290	107165	L	L	H	L	H
4/26/91	619.00	15765	107015	-	L	L	H	L
4/29/91	605.50	44990	105680	L	L	L	L	L
4/30/91	606.25	22590	106490	H	L	L	L	L
5/ 1/91	608.50	19310	108130	H	H	L	L	L
5/ 2/91	605.50	23405	110600	L	L	-	L	L
5/ 3/91	603.50	24210	107565	L	L	L	L	L
5/ 6/91	604.00	14625	107460	H	L	L	L	L
5/ 7/91	597.25	42875	112020	L	L	L	L	L
5/ 8/91	595.50	41435	113950	L	L	L	L	L
5/ 9/91	598.75	20570	111900	H	H	L	L	L

5/10/91	587.25	46190	114920	L	L	L	L	L
5/13/91	586.75	30220	118640	L	L	L	L	L
5/14/91	583.50	40810	117485	L	L	L	L	L
5/15/91	584.25	24890	119140	L	L	L	L	L
5/16/91	587.00	19820	120290	H	H	H	L	L
5/17/91	585.00	22675	124620	L	H	H	L	L
5/20/91	583.00	22620	123675	L	L	L	L	L
5/21/91	590.00	32810	127710	H	H	H	H	H
5/22/91	593.25	53715	131025	H	H	H	H	H
5/23/91	597.25	28750	131070	H	H	H	H	H
5/24/91	589.25	31710	131360	L	L	L	H	H
5/28/91	591.00	38485	131470	L	L	L	H	H
5/29/91	585.75	31715	128745	L	L	L	L	L
5/30/91	587.75	37915	130495	L	L	L	L	L
5/31/91	594.50	52415	133470	H	H	H	H	L
6/ 3/91	597.00	38940	132955	H	H	H	H	H
6/ 4/91	589.50	33175	132205	L	L	H	H	L
6/ 5/91	591.50	28625	133790	H	L	L	H	H
6/ 6/91	593.00	36475	137185	H	H	L	L	H
6/ 7/91	594.50	36400	139995	H	H	H	L	-
6/10/91	584.25	52635	137215	L	L	L	L	L
6/11/91	586.25	42895	142780	H	L	L	L	L
6/12/91	586.00	50495	148635	L	H	L	L	L
6/13/91	582.00	36065	148890	L	L	L	L	L
6/14/91	578.00	44970	158875	L	L	L	L	L
6/17/91	573.25	70150	167785	L	L	L	L	L
6/18/91	574.75	37275	164270	H	L	L	L	L
6/19/91	580.75	69665	175040	H	H	H	L	L
6/20/91	578.75	67630	177880	L	H	H	H	L
6/21/91	568.75	76535	181740	L	L	L	L	L
6/24/91	576.00	74395	184040	H	L	L	H	H
6/25/91	572.75	83175	194255	L	H	L	L	L
6/26/91	571.25	111330	206425	L	L	H	L	L
6/27/91	560.25	135755	217495	L	L	L	L	L
6/28/91	536.75	154145	216740	L	L	L	L	L
7/ 1/91	543.00	71245	207500	H	L	L	L	L
7/ 2/91	538.25	116955	207190	L	H	L	L	L
7/ 3/91	539.00	65280	206360	H	L	H	L	L
7/ 5/91	532.00	57020	207235	L	L	L	L	L
7/ 8/91	518.75	131445	218120	L	L	L	L	L
7/ 9/91	521.75	106760	215365	H	L	L	L	L
7/10/91	525.75	122300	213775	H	H	L	L	L

H = 40 33 23 23 19
 L = 45 53 60 61 63
 - = 2 2 1

Table 1-6. Percentages of gains and losses from Table 1-5

	Lower%	Higher%
1 Day:	52	48
2 Day:	62	38
3 Day:	70	30
4 Day:	73	27
5 Day:	76	24

Testing a Trend for Serial Correlation

There is one long downward trend from March 6, 1991, through July 10, 1991. This run covered 88 trading days (127 calendar days) or just over four months. The total price drop is 121 cents or 1.375 cents per trading day. The daily trading-range average over the 88 trading days is 8.17 cents, ranging between a high of 29.25 and a low of 3.25 cents. Table 1-5 has the prices and a list of higher/lower prices on the basis of 1 day, 2 days, . . . through 5 days.

Since a downtrend was preselected, we have inserted a bias to the downside. Therefore ties—those cases where the compared prices were the same—will be awarded to the H, or higher count. That results in Table 1-6.

Table 1-6 shows that the trend displays almost random choice between higher and lower prices on the one-day basis. The differences widen rapidly, however, with longer time frames. While there is no day-to-day (yesterday to today) serial correlation, even day to second day (day before yesterday to today) shows serial correlation in a trend.

Conclusion

We will demonstrate that the market's structure, its current condition, and its value can be developed from data sampled at the proper rate. The LDB offers a track of the commercial market capping (the setting of support and resistance points) and going with trends. That sort of information is now available during the trading day. Hourly LDBs allow public trend initiation to be observed as it happens. All these results ultimately become reference points for market trading management. The trader can have the information to select market positions intelligently and to minimize risk in doing so. Once that is done, winning becomes a question of probabilities. If you know what the market is doing, its current condition, and its current value, you have the basis for expecting certain behavior. Knowing just that much can give you a very large edge.

Having proper data is critical in understanding one's market. The sampling rate must be adequate to sustain the analysis. Much of the data used by traders today fails the test. New developments in data collection are the hope of the future. Today, many traders can generate distributions (profiles) in real time. As personal computer systems improve, both ticks and ancillary data such as the hourly LDBs can be received simultaneously. The off-line position trader is gaining more and more access to nonstandard data, just the sort of information needed to be competitive in today's market.

2

Liquidity Data Bank™ / Market Profile™ Analysis

The Liquidity Data Bank™ (LDB), illustrated in Chapter 1 (Figure 1-4) is one of the “nonstandard” types of data. Currently released only by the Chicago Board of Trade and the Chicago Mercantile Exchange, the end-of-day reports are typically ready at 7:30 P.M. (second CBOT reconciliation), 11 P.M. (third, and essentially last, CBOT reconciliation) and 6:30 A.M. (CME Liquidity Report). An hourly, within-the-day LDB report from the CBOT is covered in Chapter 3.

LDB reports contain unique information on trading volume at-price that is not available from any other source. These data allow the trader to evaluate the different types of floor activity (member, commercial, off-floor member, and public), to track volume and volume changes (by price), and to locate the volume value area (central 70 percent of trading). A part of each LDB record is the Market Profile, showing day market structure with the profile distribution. As a whole, the LDB contains both detailed volume data and an overall picture of the day’s TPO distribution, tying the parts into the structure of the day.

Unlike the LDB volume information, which comes from the clearing, the Market Profile can be readily built during the trading day. Its use is mainly in determining the emerging market structure, e.g., whether the market is balanced, with a bell-shaped distribution of TPOs, or is moving. A great deal of the profile analysis in CBOT (1984), Dalton, Jones, and Dalton (1990), Jones (1988), Steidlmayer and Buyer (1986), and Steidlmayer and Koy (1986) use information from the developing profile to infer the day’s market condition and value. Reading the profile as it is building throughout the day has proved extremely difficult for the off-floor trader. The reason is, in part, that without a longer-term understanding of the market, which is to say, the current condition of the market, there is a great deal of ambiguity in a profile. If the market is in a trading range (bracketing), the same price movement can fit either of

two types: (1) it can be normal rotation, as expected in a balanced market (called *trade facilitation* because price is moving to “facilitate,” or accommodate, all participants); or it can be a breakout of the bracket that signals a change in market condition (from bracketing to trending). The trader can know the market’s condition. This is the subject of Chapter 3.

Reference Points

The LDB and Market Profile are rich sources of current information. Put another way, the two of them produce many reference points of use in market understanding and trading decisions. A few useful reference points are elaborated below. Many of the reference points given are useful only in balanced markets where slight nuances can be significant. An extensive discussion can be found in Dalton, Jones, and Dalton (1990).

Total Volume

The LDB lists cleared volume for each side of the transaction; a round turn counts as two. Cleared volume counts actual trades, since both sides (buy and sell) are matched. Some key reference points are changes in total volume, volume relative to its average, direction of volume change, and value area. Trader interest in the market is shown by volume traded; and relative interest is shown by day-to-day comparisons of volume at price. Dispersion of volume compares the volume above the high volume point to that below, which shows relative pressure for the day. The peak volume point for one day is often an important reference point for the next and can show either support or resistance. Volume by quadrants (quarters of the price range) identifies heavier trading locations.

Volume by Trader Type

Volume is listed by price by trader type (Cti1 = Floor, Cti2 = Commercial, Cti3 = Off-floor members, Cti4 = Public). Reference points include commercial activity inside and outside the value area, public activity inside and outside the value area, and floor activity for the day relative to commercial and public norms.

Market Profile TPOs

The point of control (peak TPO count) locates the high point of value for the day. Structure of the day comes from the distribution, bell-shaped or other. The TPO value area is used for comparison to the volume value area. TPO counts above and below the control price measure differential trading pressure. The Trade Facilitation Factor, TFF, is the ratio of total TPOs to the number of price divisions traded.

LDB Reports for Balanced and Trend Days

A Balanced Day

An LDB report for a balanced market day is given as Figure 2-1. The day type, according to profile theory, would be "normal variation," one in which the early base (TPOs Z, \$, A) is extended, but the day retains a bell-shaped distribution.

An LDB report has three parts:

1. **Volume Summary for Either CBOT or CME**
Against each price traded the report shows the volume at that price (each side of the trade is counted)
%VOL, the percentage that volume is of the day's total
%Cti1, the percentage of that volume traded by floor members (locals)
%Cti2, the percentage of that volume traded by commercials
%Cti3, the percentage of that volume traded by off-floor members
%Cti4, the percentage of that volume traded by public and others
brackets, the half-hour periods (TPOs) when that price traded
2. **TPO Analysis calculated by CISCO for Either CBOT or CME.**
TPOs are used to estimate the value area, to find the upper and lower activity counts, and to calculate the CISCO Trade Facilitation Factor (ratio of total TPOs to ticks, or steps). These data provide a quick measure of buying/selling pressure and whether the market is facilitating trade. CISCO has published research on the validity of TPO value areas, finding that they are a very good substitute for volume-based ones. For non-CBOT/CME profiles, TPO analysis is all we have. Of course, during the day, TPO analysis is very useful for all markets.
3. **Futures Summary**
Futures summary data is released only by the CBOT. It shows the trading at the open, close, high, and low and within the four price quadrants. These data help in the evaluation of the market's response at those various price levels, and of which market participants are active at each point.

Figure 2-1. LDB report for March 1993 T-bonds, January 22, 1993

CHICAGO BOARD OF TRADE LIQUIDITY DATA BANK* REPORT

VOLUME/FUTURES SUMMARY REPORT FOR 01 22 93

COMMODITY -- T-BOND (CBOT) DAY MAR 93

Volume Summary

Price	Volume	%Vol	%Cti1	%Cti2	%Cti3	%Cti4	Brackets
10612	354	0.1	52.3	0.0	0.6	47.2	\$
10611	5972	1.3	55.3	7.0	0.5	37.2	\$
10610	13132	2.9	50.2	17.4	5.5	27.0	\$
10609	8804	1.9	64.1	13.0	2.6	20.3	\$
10608	11955	2.6	58.8	6.0	2.5	32.7	\$KL
10607	28341	6.2	55.9	12.0	1.9	30.3	\$KL
10606	33905	7.5	58.6	10.9	3.4	27.2	\$KL
10605	20108	4.4	53.9	6.8	3.2	36.1	Z\$HKL
10604	37461	8.2	58.0	9.8	2.0	30.2	Z\$GHJKLM
10603	60418	13.3	56.8	10.4	2.9	29.9	Z\$AGHIJKL
10602	40480	8.9	58.5	10.5	4.3	26.8	Z\$AGHIJK
10601	31181	6.9	60.1	14.2	4.1	21.6	\$ABDGHJK
10600	41844	9.2	55.4	11.0	4.3	29.3	\$ABCDGIJK
10531	28197	6.2	58.3	11.2	2.0	28.5	ABCDGFIJ
10530	24306	5.3	62.0	9.1	2.2	26.7	ABCDEFGF
10529	24767	5.4	57.9	13.8	2.7	25.7	BCDEFG
10528	24391	5.4	56.1	14.6	1.8	27.6	BCEF
10527	11665	2.6	53.5	21.5	1.2	23.9	BCE
10526	7145	1.6	52.1	19.9	0.1	27.8	BE
10525	24	0.0	50.0	0.0	0.0	50.0	B
70%	10607	321935	70.8	57.4	10.8	3.2	Z\$ABCDEFGHIJKLM
V-A	10531						

		%Cti1	%Cti2	%Cti3	%Cti4
Volume for T-BOND (CBOT) DAY	MAR 93	454450	57.3	11.5	2.9
Volume for all T-BOND (CBOT) DAY		456855	57.3	11.5	2.9

TPO Analysis

CENTER 10603

VALUE AREA FROM TPOS

 UPPER 10604
 LOWER 10529

 TPOS UPPER 22
 TPOS LOWER 56

TPO TOTAL 93
 TICKS (STEPS) 20
 TF FACTOR 4.7

Futures Summary

OPEN 10604 97879 21.5 57.3 10.1 2.6 30.0 Z\$AGHIJKLM
 10603
 HIGH 10612 354 0.1 52.3 0.0 0.6 47.2 \$
 LOW 10525 24 0.0 50.0 0.0 0.0 50.0 B
 CLOSE 10604 97879 21.5 57.3 10.1 2.6 30.0 Z\$AGHIJKLM
 10603

Quadrants

QD 1 10612 40217 8.8 56.6 11.3 3.2 28.9 \$KL
 10608
 QD 2 10607 180233 39.7 56.9 10.2 2.7 30.2 Z\$AGHIJKLM
 10603
 QD 3 10602 166008 36.5 58.5 11.2 3.5 26.7 Z\$ABCDEFGHJK
 10530
 QD 4 10529 67992 15.0 55.9 16.0 1.8 26.3 BCDEFG
 10525

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An Analysis of the LDB Report for January 22

The Volume Summary shows a value area of 10607 to 10531, well centered within the price range; the volume is balanced. Floor activity (Cti1) is relatively uniform throughout the entire day. Commercials (Cti2) averaged 11.5 percent of the volume, about normal. They became unusually active when prices dropped below the initial base, 21.5 percent at 10527 and 19.9 percent of the volume at 10526. As the market dipped below value, commercials stepped in, with heavy buying, stopping the downward thrust, forcing price back up. Early in the day, heavy commercial volume at 10610 and 10609 was probably selling activity, since the

market opened at 10604/10603, then about 7:40 quickly ran up to 10612 and right back down within a few minutes. At the very bottom price of the day, the public (Cti4), no doubt, sold and the floor (Cti1) fed them. Trading at 10525 occurred only around 8:40 A.M., a quick dip and a fast rejection, based on the commercial action at 10526 and 10527. So, for the day, the commercials capped the market at 10610 (resistance) and 10526 (support). For the coming day, the public trader can have some confidence in a near-term support level around 10526/10527, with resistance around 10610. Breaching either price is an alert to a change of value.

According to the TPO Analysis, the center of control, the price with maximum TPOs, is at 10603. The value area of 10604–10529, calculated from the TPOs, compares to 10607–10531 calculated from the volume, so the TPO value area is slightly lower. TPO value areas tend to be close approximations to volume value areas ("Determining . . ." 1987) and are useful during the day before LDBs are available and in markets that have no LDB report at all. The TPO count above and below the center of control is 22 and 56 from profile theory, indicating a net upward pressure. The TF (trade facilitation) Factor (total TPOs/ticks) measures how well the market is facilitating trade; is it accommodating all market participants? Values of TF above about 6 in T-bonds indicate many participants standing aside (narrow trading range). (Perfect trade facilitation would be 1.0 (only one TPO per price in a strongly trending market), the poorest would be 15 for the bonds (all TPOs on the same price line).

The first part of the Futures Summary lists the trading at the open, high, low, and close prices. Open and close prices may be traded at other times of day, as is clear from the Volume Summary. For a balanced day like this one, there is a great deal of activity in the middle, which just happens to contain both the open and close. Note that the open and close are not marked on the LDB volume summary.

The second part of the Futures Summary breaks the day's display into price quadrants and examines the trading within each price range. On a balanced day, one expects most trading to be in the center two quadrants, with little at the two extremes. In quadrant 4, the bottom, commercials show unusually heavy trading, which we already understand from the Volume Summary; the commercials were capping, locating support at 10527/10526.

A Trend Day

For the next trading day, Monday, January 25, the LDB shows quite a different situation. The market was quiet during B period (8:30 to 9:00 A.M.) and most of C period, after the opening periods (Z, \$, A) at 10621 to 10612.

Figure 2-2. LDB report for March 1993 T-bonds, January 25, 1993

CHICAGO BOARD OF TRADE

LIQUIDITY DATA BANK* REPORT

VOLUME/FUTURES SUMMARY REPORT FOR 01 25 93

COMMODITY -- T-BOND (CBOT) DAY MAR 93

Volume Summary

Price	Volume	%Vol	%Cti1	%Cti2	%Cti3	%Cti4	Brackets
10709	665	0.1	58.6	28.7	0.0	12.6	L
10708	16218	2.9	47.2	6.5	2.7	43.6	LM
10707	16184	2.9	56.0	10.1	2.7	31.2	LM
10706	12224	2.2	55.4	8.6	2.9	33.1	KL
10705	23217	4.2	57.6	6.2	2.2	34.1	KL
10704	13933	2.5	46.3	4.5	1.7	47.5	HJKL
10703	18353	3.3	54.7	8.8	2.7	33.7	HJKL
10702	19316	3.5	52.8	14.4	4.6	28.2	HIJKL
10701	30167	5.4	50.6	13.6	3.2	32.6	HIJK
10700	35717	6.4	52.4	11.1	1.9	34.7	HIJK
10631	16612	3.0	51.8	8.4	5.0	34.8	HIJ
10630	18387	3.3	53.7	7.5	1.4	37.4	GHJ
10629	9190	1.6	55.8	13.0	2.2	29.1	FGHJ
10628	16850	3.0	55.6	12.1	3.0	29.2	FGHJ
10627	21570	3.9	56.8	13.1	3.5	26.6	FG
10626	5389	1.0	47.8	13.5	1.2	37.5	FG
10625	7963	1.4	56.8	6.1	1.5	35.6	DEF
10624	30872	5.5	57.1	10.7	3.2	29.0	DEF
10623	27665	4.9	57.9	10.5	1.6	30.0	CDEF
10622	24386	4.4	50.0	16.7	4.2	29.1	CDEF
10621	26605	4.8	53.2	10.7	2.7	33.4	%CDF
10620	15425	2.8	53.2	10.0	3.2	33.6	%BCDF
10619	28824	5.2	56.2	9.4	3.1	31.4	%BC
10618	28385	5.1	54.9	15.7	3.3	26.1	%ABC
10617	28749	5.1	60.2	9.7	4.4	25.7	%ABC
10616	18165	3.2	53.1	14.7	3.3	28.8	Z%AB
10615	20593	3.7	58.7	14.4	2.5	24.4	Z%AB
10614	14035	2.5	57.9	14.4	1.3	26.4	Z%
10613	13397	2.4	56.4	9.0	4.1	30.4	Z%
10612	76	0.0	67.1	0.0	0.0	32.9	Z
70%	10708	406243	72.7	53.7	10.6	2.8	32.9 %BCDEFGHIJKLM
V-A	10620						

		%Cti1	%Cti2	%Cti3	%Cti4
Volume for T-BOND (CBOT) DAY	MAR 93	559132	54.5	11.1	2.9
Volume for all T-BOND (CBOT) DAY		563363	54.5	11.1	2.9

TPO Analysis

CENTER 10702

VALUE AREA FROM TPOS

UPPER 10706

LOWER 10620

TPOS UPPER 16

TPOS LOWER 72

TPO TOTAL 95

TICKS (STEPS) 30

TF FACTOR 3.2

Futures Summary

OPEN	10613	27432	4.9	57.2	11.8	2.7	28.4	Z\$
	10614							

HIGH	10709	665	0.1	58.6	28.7	0.0	12.6	L
------	-------	-----	-----	------	------	-----	------	---

LOW	10612	76	0.0	67.1	0.0	0.0	32.9	Z
-----	-------	----	-----	------	-----	-----	------	---

CLOSE	10707	32402	5.8	51.6	8.3	2.7	37.4	LM
	10708							

Quadrants

QD 1	10709	150277	26.9	52.7	9.7	2.9	34.8	HIJKLM
	10701							

QD 2	10700	123715	22.1	53.8	10.9	2.7	32.6	FGHIJK
	10626							

QD 3	10625	161740	28.9	55.0	11.0	2.9	31.1	\$BCDEF
	10619							

QD 4	10618	123400	22.1	57.0	13.1	3.3	26.6	Z\$ABC
	10612							

Around 9:20 an upward move past 10621 began, trading between 10625 and 10620 until nearly the end of F period (about 10:55). From there it went on up, to close at 10707–10708.

Several items are of interest: volume is very heavy; at no point during the move is commercial (Cti2) trading at such a level that there is any threat of stopping the rise; and the public (Cti4) is strong throughout. If one were in the market as a day trader, the profile of periods Z through F could have indicated balance. The opening was a gap up from Friday, however, and the market would have to be considered trending, contradicting any definition of balance. On a day with such a strong undercurrent, one would either go with the flow or be guided by the hourly LDBs, covered in Chapter 3.

At the close of January 25, the trader is faced with a difficult market to analyze. There is no balance. Close is near the high, so there has been no time to confirm that price is at value; if price had been rejected at the top and traded lower with heavy volume, the inference would be that value had caught price. Trading in the upper quadrant is heavy and the profile shows a market structure with multiple distributions. As we will see in Chapter 4, this breakout can be described by a run-pause scenario: we have experienced the breakout, and now we expect the pause.

Cti Volume Analysis: General

On a daily basis, most volume analysis turns on the value area. Nuances in volume by the four classes of floor member can also be illuminating, however. One can measure and archive a particular class's activity over a period of time, gaining a base from which to draw conclusions. Markets change in an evolutionary, long-term way and also in a repetitive, cyclic manner. For short time frames, we have developed three methods of analyzing the volume behavior of the four member types. Based on the value-area concept, these are volume per price tick, volume inside/outside the value area, and the quadrant measure. We find that commercial traders often identify value by selling near the top and buying near the bottom. At other times, the public may show the inception of a trend by leading a breakout. Then, if value has changed, the commercials will probably join them. Unusually low floor-trader volume can indicate a level of indecision in the market. The possibilities are virtually endless simply because of the depth of the information available. The following section applies the three methods to the volume of commercial trader action.

More than a single Cti measure is needed because the distributions are often not regular and symmetrical about the middle price. Skewed dis-

tributions can be such that in some cases there is no trading above (or below) the value area. When that happens, the value area (high 70 percent of the trading) will not be centered and measures of volume above and below the value area will be distorted. In discussing the three methods, reference will be made to column headings in Table 2-1.

Volume per Price Tick (VOL/PRICE TIC)

The average volume per price tick within the value area is computed and arbitrarily set equal to 100 and placed in the column labeled V-VA. Then the average volume per price tick above the value area is computed. That is divided by the average volume per price tick within the value area and posted as a percentage in column (V-AB). The same is done with the volume below the value area for column V-BL. Normally, the volume above and below will be much smaller and their percentages will be much less than 100. When either gets relatively large something unusual is happening.

Value Area

Total volumes above and below the value area are used for this calculation. The starting point is the average percentage of volume in the value area, labeled %VA. Then the percentages of volume the value area are found above (%ABV) and below (%BLO) the value area. The total of %VA + %ABV + %BLO add up to the %Cti for the class being calculated at each price.

Quadrant

The quadrant measure is the least sensitive, finding the fraction of the total Cti volume in the upper and lower quarters of the day's price range. This measure is important when the value area abuts the top or bottom price. When that happens, it is impossible to tell what the Cti volume above or below would have been had trading continued beyond the close.

Commercial Traders Volume Analysis: An Example

To "read" the commercial, you first need to know his or her average behavior. Then departures from the norm indicate how the commercial feels about the market. If price is falling and one day there is substantial commercial activity below the value area, it is a good bet that price has moved below value and the commercials are buying. If a market is rallying and there is unusually heavy commercial activity throughout the upper part of the range, price has probably not reached value. When price

has passed value, expect the commercials to be selling at just a few prices (the capping phenomena).

One of the best ways to understand the commercial message is to note the time of day the unusual commercial activity occurred. Commercial activity near the top (bottom) price early in the day indicates resistance (support). Heavy commercial volume at the end of the day sends an unclear signal. It could be capping or it could mean the commercials have altered their perception of value and are going with the move. In that case, it is wise to await the next day's trading before coming to a conclusion.

The net result of "commercial watching" is risk limitation. If the smartest traders are selling, should you be buying?

We use data tables that cover the last 10 days. The general idea is to detect the unusual; so the 10-day average of the commercial behavior becomes the base. As noted above, commercial activity at the top of the day's range early in the day sets a resistance point, activity at the bottom denotes buying, the setting of support. Unusually heavy commercial activity on the close requires additional information from the next day to show whether it was buying or selling.

Analysis of the commercial (Cti2) behavior for soybean oil for the 10-day period May 11 through May 25, 1992, is in Table 2-1. Details of the calculations for each of the three methods are below.

VOL/PRICE TIC

Experience has shown that volumes over 70 percent of the value-area volume per tic tend to be significant. We look for cases where V-AB and V-BL are over 70. On May 20, V-AB = 30 and V-BL = 45. So both are less than half the value-area trading. On May 22, V-AB is 89, so the Cti2 trading on the high side of the price range is significant. The commercials could have been buying or selling the highs around 2064. But the action was early in the day, so we believe that the commercials were selling the highs. Next, we will look at the Value Area analysis to see if there is confirmation.

VALUE AREA

Experience here is that values of %ABV and %BLO in excess of 50 percent of their 10-day averages are significant. On May 22, the amount of Cti2 trading was 3.4 percent of the total (column %TOT). This was divided among the region above (%ABV = 1.1), the value-area region (%VA = 2.0), and the region below (%BLO = 0.3), ($1.1 + 2.0 + 0.3 = 3.4$). Now we look to the 10-day averages (10-day average %ABV = 1.4) and find that the 1.1

percent traded is 2.2 times the average of 0.5 (220 percent), The %BLO is 0.3, which is 43 percent of the 10-day average of 0.7. So the Value Area method also showed unusual activity at the top and none at the bottom.

QUADRANT

As with the Value Area method, quadrant values over 50 percent above their 10-day averages are deemed significant. For May 22, 31.4 percent of the total Cti2 volume traded that day wound up in the upper quadrant, with 9.0 percent in the lower. Comparing these values to the averages shows that the upper quadrant had unusual activity: 31.4 divided by 20.7 shows activity over 1.5 times normal (150 percent). The quadrant measure, then, does confirm the other two; it too suggests commercial selling activity early in the day.

Examination of the 10-day period suggests that the upper commercial activity is "capping" the market at successively lower levels—2125 on May 13, 2143 on May 14, 2111 on May 19, 2076 on May 21, and 2064 on May 22—as the market slowly trended down. Likewise, the support level dropped too, but much less (2082 on May 13 to 2050 on May 21). The trader would probably not want to short this market, since the lower commercial level seems rather firm around 2075 to 2050. A price below the support, say 2025, however, could portend a resumption of the trend.

Table 2-1. Commercial activity analysis for July 1992 soybean oil, May 11 through 22, 1992

CTI2 STUDY FOR: Soybean Oil 07 92

DATE	HIGH	LOW	CLOSE	CTI	VOL/PRICE TIC			VALUE AREA				QUADRANT	
					V-AB	V-VA	V-BL	%TOT	%ABV	%VA	%BLO	%QD1	%QD4
05 22 92	2064	2052	2054	2	89	100	47	3.4	1.1	2.0	0.3	31.4	9.0
05 21 92	2076	2050	2051	2	26	100	7	3.8	0.9	2.9	0.0	12.9	37.7
05 20 92	2104	2075	2093	2	30	100	45	3.7	0.7	2.7	0.3	4.8	51.3
05 19 92	2111	2077	2086	2	0	100	11	4.7	0.0	4.5	0.3	47.7	0.9
05 18 92	2134	2098	2128	2	40	100	50	2.3	0.2	1.4	0.7	17.9	22.8
05 15 92	2143	2105	2106	2	0	100	85	7.5	0.0	5.2	2.3	21.2	18.8
05 14 92	2143	2093	2119	2	24	100	0	7.2	1.4	5.7	0.0	5.1	38.9
05 13 92	2125	2082	2112	2	0	100	92	9.2	0.0	6.4	2.7	47.5	22.4
05 12 92	2084	2058	2081	2	29	100	11	4.6	0.6	3.8	0.2	10.2	3.6
05 11 92	2065	2031	2054	2	3	100	14	3.6	0.1	3.0	0.5	8.2	2.1
AVERAGE				2	24	100	36	5.0	0.5	3.8	0.7	20.7	20.8

Table 2-1. Commercial analysis of soybean oil, July 1992, May 11 - 22.

Table 2-2. Commercial activity review for July 1992 soybean oil, May 11 through 22, 1992

Commercial Activity Review (10 days max.). Significant action is:
 VOL/PRICE TIC: Values of 70 or more.
 VALUE AREA: Fifty percent greater than the average.
 QUADRANT: Fifty percent greater than the average.

05 22 Upper Comm1 Action:	2064 VOL/PRICE	VALUE AREA	QUADRANT
05 21 Upper Comm1 Action:	2076	VALUE AREA	
Lower Comm1 Action:	2050		QUADRANT
05 20 Lower Comm1 Action:	2075		QUADRANT
05 19 Upper Comm1 Action:	2111		QUADRANT
05 15 Lower Comm1 Action:	2105 VOL/PRICE	VALUE AREA	
05 14 Upper Comm1 Action:	2143	VALUE AREA	
Lower Comm1 Action:	2093		QUADRANT
05 13 Upper Comm1 Action:	2125		QUADRANT
Lower Comm1 Action:	2082 VOL/PRICE	VALUE AREA	

On the up side, the resistance is in the 2100 region. Since the commercials have "capped" in this region, only a substantial breakout could change the market condition.

An easy reference table (Table 2-2) lists the commercial activity prices and volumes and interprets the Cti2 activity using the three rules posted.

Commercial Floor Traders Identify Value: General

Value of a commodity is its most important attribute, one that all trading methods seek to identify. The fundamentalist is clearest about it: isolate all the economic factors, weight them, combine them, and presto: Value. Technical analysts use price (and sometimes volume and open interest) to develop trading models—implicitly equating some type of smoothed price change to value change. Nevertheless, the link between price and value in most models is tenuous because value is so very difficult to tie down. Then, too, value is often a moving target. In bracketing, trading-range markets, value is the peak region of "price over time." That is, value is the region that wins the trading popularity contest, the price region with the most trading over the time period of the bracket. Identifying this "fair" price (region) can be accomplished in a bracketing market with the Overlay Demand Curve™ (see Chapter 4), discussed in ("Locating Value . . ." 1989) and in a book on the same subject (Jones 1991). Trading of commercial members on the floor of the Chicago Board of Trade and the

Chicago Mercantile Exchange provide a sometimes daily update of current value.

Commercial members use the futures markets principally for business purposes rather than for speculation. They represent grain merchants, livestock hedgers, banks, oil companies, S&Ls, and so forth. A commercial's charge is to do daily business at value; in other words, within value area (where 70 percent of the trading in the futures markets occurs that day; see Steidlmayer and Buyer 1986). Because of the nature of their business, commercial traders know more about the location of (big v) Value and changes in Value than others in the market. By Value (capital v) we mean the longer-term, multi-day Value found by the Overlay Demand Curve™; by value (little v) we mean "today's" value, as in value area.

A consequence of their deeper knowledge of the market is that commercials tend to keep bracketing, trading-range markets in balance. Commercial traders confirm Value through direct market intervention, i.e., responsively selling highs or buying lows. By these actions they tend to set and reset the support and resistance levels sought and used by other traders. Interpreting the commercial trading activity continually locates and updates value for the trader.

When Value is changing, the commercials are initially seen going with the trend, i.e., buying the high of the day in an uptrend or selling the low in a downtrend, and, later on, setting increasingly higher support levels in an uptrend or increasingly lower resistances in downtrends. As a trend comes to an end, commercial capping at both extremes (support and resistance) comes back into play.

A "Quiet" Day

The LDB™ is the only source of day-to-day commercial trading activity. Although the LDB has been publicly available since 1985, it is fair to say that many traders are not familiar with an LDB display. We will begin with a quiet day in the Chicago Board of Trade soybean market, a day with low commercial trading activity outside the value area.

There are many days when the commercials are "minding their own business," trading primarily in the value area. On such days, trading outside is relatively small. We use such days as a base to set the standard for nonintervention. It is tempting to call the nonintervention days normal behavior, but "normal behavior" implies "most frequent." In the month of July, 15 of the 21 trading days showed some unusually high commercial trading activity outside the value area. The following month

showed more. Clearly, the commercials' "normal" behavior includes market intervention. Figure 2-3 shows such a quiet trading day with no unusual commercial activity outside the value area.

The columns as before, are Price, Volume (both sides of the trade), % Vol (percentage of the day's volume at that price), %Cti1 (floor member activity as a percentage of the % Vol figure), %Cti2 (commercial member activity as a percentage of % Vol), %Cti3 (off-floor member activity as a percentage of % Vol), %Cti4 (public and all other activity as a percentage of % Vol), and lastly, Brackets (half-hourly identifiers: D is 9:30 to 10 A.M., E is 10 to 10:30, etc.).

The value area in the %Cti2 column is denoted by "v" (and annotated by "v-a" on the right), while above and below are "a" and "b" respectively. The value area is calculated by the exchange, as listed in the lines entitled 70%, V-A. For this day, %Cti2 is 3.0 percent of the total volume, of which 0.2 is above (volume from 5896 to 5886), 0.3 (volume from 5864 to 5850) is below, and 2.5 is in the value area ($0.2 + 2.5 + 0.3 = 3.0$). (A high-appearing %Cti2 value at 5856 is explained by the low volume; 18.2 percent of 330 is only 60 of the 51288 trades made by the commercials, a negligible amount.) Trading outside the value area is small compared to that inside. This is a typical quiet day, one in which the commercials show little interest outside the value area.

Commercial Resistance at a Price Far from the Close

Taking on the role of speculator, commercial traders use their knowledge of Value to enter balanced markets at extremes. Their intervention (capping) at a price far from the day's close often drives the market rapidly back to Value. This was the situation on July 8, in the November 1992 soybeans (Figure 2-4), where commercial market activity near the highs rapidly drove price back down to Value.

Column headings and markings are the same as in Figure 2-3. The %Cti2 trading shows very heavy commercial activity at 5900, 5896, and 5890, all above the value area. With the help of the tick volume display in Figure 2-5, we can imagine a scenario like this: Well-camouflaged commercial selling in J period (12:30 to 1:00 P.M.) ran the market down to 5890. Then the low-volume probe back up to 5900 failed when the buyers looked around and no one was with them. In the rush for the exit, price was pushed all the way down to 5874, closing well within the value area.

Heavy trading appeared in J period (12:30 to 1:00 P.M.), around 5900 and also at 5896, 5894, and 5892. A probe in the closing period got back up to 5900 before collapsing to close at 5874.

Figure 2-3. LDB report for November 1992 soybeans, July 7, 1992

CHICAGO BOARD OF TRADE				LIQUIDITY DATA BANK* REPORT			
VOLUME/FUTURES SUMMARY REPORT FOR 07 07 92							
COMMODITY -- SOYBEANS (CBOT)				NOV 92			
Price	Volume	%Vol	%Cti1	%Cti2	%Cti3	%Cti4	Brackets
5896	590	0.3	59.3	4.2a	8.5	28.0	G
5894	3410	2.0	44.0	2.3a	5.6	48.1	FG
5892	3350	2.0	67.0	1.0a	1.8	30.1	FG
5890	7690	4.5	60.6	0.5a	2.3	36.5	EFGH
5886	11210	6.6	61.2	1.4a	10.7	26.8	EFGHIJK
5884	18190	10.6	60.6	1.7v	11.6	26.1	EFGHIJK <== v-a
5882	7740	4.5	70.0	2.2v	11.3	16.5	EFGHIJK |
5880	19160	11.2	49.2	4.1v	10.8	35.9	EFGHIJK |
5876	10130	5.9	61.4	3.5v	8.6	26.5	EFGHIJK | <== Close
5874	13500	7.9	54.1	4.5v	13.9	27.6	DEFGHIJK |
5872	6900	4.0	69.6	5.4v	8.0	17.0	DEFGIK |
5870	26985	15.8	54.9	4.4v	6.3	34.3	DIK |
5866	3595	2.1	56.5	1.1v	7.8	34.6	DIK <== v-a
5864	15895	9.3	61.1	2.3b	9.4	27.2	D
5862	6210	3.6	72.5	3.6b	3.9	20.0	D
5860	9355	5.5	69.7	1.6b	7.2	21.4	D
5856	330	0.2	53.0	18.2b	1.5	27.3	D
5854	4150	2.4	31.9	1.8b	17.5	48.8	D
5850	2570	1.5	33.9	0.2b	9.9	56.0	D
70%	5884	122095	71.4	57.9	3.5	9.7	28.9 DEFGHIJK
V-A	5864						
					%CTI1	%CTI2	%CTI3 %CTI4
Volume for SOYBEANS (CBOT)			NOV 92	170960	58.3	3.0	9.0 29.7
Volume for all SOYBEANS (CBOT)				243960	56.8	3.1	7.6 32.5

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The commercials have spoken clearly. Price is limited on the upside by the resistance level associated with the cap (5900 here). We can see from the symmetry of the distribution in the Brackets column, i.e., the bell-shaped curve, that the market is balanced for the day.

Figure 2-4. LDB report for November 1992 soybeans, July 8, 1992

CHICAGO BOARD OF TRADE

LIQUIDITY DATA BANK* REPORT

VOLUME/FUTURES SUMMARY REPORT FOR 07 08 92

COMMODITY -- SOYBEANS (CBOT)

NOV 92

Price	Volume	%Vol	%Cti1	%Cti2	%Cti3	%Cti4	Brackets
5904	380	0.2	55.3	0.0a	5.3	39.5	J
5902	930	0.6	33.3	0.0a	0.0	66.7	J
5900	4995	3.0	60.1	11.6a	1.1	27.2	JK
5896	6160	3.7	54.4	4.1a	8.1	33.4	IJK
5894	8325	5.0	66.4	1.6a	7.2	24.7	EIJK
5892	6200	3.7	61.9	0.7a	7.5	29.9	EIJK
5890	8530	5.1	55.3	4.3a	5.2	35.2	EIJK
5886	5580	3.3	66.5	1.2v	8.2	24.1	EFHIK <== v-a
5884	16940	10.2	59.4	2.4v	11.5	26.7	EFHIK
5882	6290	3.8	69.4	3.6v	6.5	20.5	EFGHIK
5880	8930	5.4	53.3	5.1v	8.3	33.3	DEFGHIK
5876	9640	5.8	71.4	1.5v	7.7	19.5	DEFGHK
5874	14060	8.4	58.1	3.5v	11.3	27.1	DEFGHK <== Close
5872	7500	4.5	64.0	2.6v	16.1	17.3	DEFGHK
5870	12290	7.4	57.2	5.6v	7.0	30.1	DEFGHK
5866	9200	5.5	62.5	3.1v	10.7	23.7	DFG
5864	10120	6.1	51.5	0.3v	10.5	37.6	DFG
5862	5695	3.4	68.7	0.4v	9.2	21.6	D
5860	15570	9.3	67.4	1.2v	5.1	26.3	D <== v-a
5856	3190	1.9	54.2	6.4b	8.2	31.2	D
5854	5100	3.1	23.3	2.2b	3.5	71.0	D
5850	1250	0.7	29.6	0.0b	5.2	65.2	D
70Z	5886	121815	73.0	61.7	2.6	9.3	26.4 DEFGHIK
V-A	5860						
					%Cti1	%Cti2	%Cti3 %Cti4
Volume for SOYBEANS (CBOT)		NOV 92	166875	59.6	2.9	8.3	29.2
Volume for all SOYBEANS (CBOT)			234645	58.4	3.8	6.7	31.1

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Figure 2-5. Tick volume for November 1992 soybeans, July 8, 1992

SX	SOYBEANS (CBOT)	NOV 92	8-JUL-92	15:31:18
5904	J 2			
5902	J 4			
5900	JK 12 1	<== J period (down) activity		
5896	IJK 6 22 5			
5894	EIJK 1 7 24 11			
5892	EIJK 5 6 15 14			
5890	EIJK 14 9 4 13			
5886	EFHIK 23 1 3 9 13			
5884	EFHIK 30 4 6 8 13			
5882	EFGHIK 18 7 1 8 6 4			
5880	DEFGHIK 3 7 13 5 14 3 4			
5876	DEFGHK 12 5 26 7 14 0			
5874	DEFGHK 26 3 31 7 8 3	<== Close		
5872	DEFGHK 25 2 15 11 2 1			
5870	DEFGHK 12 1 3 20 1 1			
5866	DFG 12 4 22			
5864	DFG 26 1 9			
5862	D 38			
5860	D 37			
5856	D 18			
5854	D 10			

The Soybean Cap—Did It Work?

It is always a matter of interest to the trader just how effective the capping is (Table 2-3). In our studies we have found commercial capping to be dynamic, to be tested and reaffirmed over and over. Of course, a cap should be expected to remain until market conditions change. This one was long-lived, having been the last resistance identified before the market turned down. So this cap held at least until the present writing (on 8/28, the close was 5432). Later on, a T-bonds study will demonstrate multiple capping over just a few days.

Table 2-3. Daily summary prices in November soybeans following the commercial capping on July 8

	Open	High	Low	Close	Volume	
7/08/92	5850	5904	5850	5874	94265	<== Cap at 5900
7/09	5874	5896	5810	5814	130935	
7/10	5840	5874	5832	5850	83260	
7/13	5750	5830	5750	5820	125545	
7/14	5810	5830	5770	5772	92125	
7/15	5740	5780	5740	5756	84215	
7/16	5750	5760	5684	5692	116610	
7/17	5710	5740	5652	5656	111780	
<hr/>						
7/31	5614	5636	5510	5520	132300	

Figure 2-6. LDB report for December 1992 T-bonds, June 11, 1992

CHICAGO BOARD OF TRADE LIQUIDITY DATA BANK* REPORT
 VOLUME/FUTURES SUMMARY REPORT FOR 06 11 92

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COMMODITY -- T-BOND (CBOT) DAY      SEP 92
Price  Volume  %Vol  %Cti1 %Cti2 %Cti3 %Cti4 Brackets
9914   7446   1.6  43.9  16.4a  0.6  39.1 ACDE
9913   42945  10.4  59.1  14.2v  3.4  23.3 ABCDEF <== v-a
9912   66635  16.2  54.8  14.8v  4.7  25.7 ABCDEFGH !
9911   32498  7.9  54.2   9.8v  6.1  30.0 ABCDEFGHI !
9910   24456  5.9  54.9  18.3v  2.5  24.3 $AFGHIJLM !
9909   35977  8.7  58.2  14.9v  1.9  24.9 $AHIJKLM !<==
9908   38984  9.5  57.4  16.4v  1.9  24.3 $AHIJKL ! Close
9907   47301 11.5  58.7  19.2v  3.1  19.0 $AKL !
9906   26932  6.5  53.3  17.8v  2.5  26.3 $AKL <== v-a
9905   12556  3.0  56.6  19.4b  0.6  23.4 $K
9904   12001  2.9  54.6  16.7b  1.6  27.0 $
9903    2987  0.7  54.1  25.7b  1.6  18.5 $
9902    3426  0.8  46.5  17.8b  0.5  35.2 $
9901    1578  0.4  56.1   0.5b  3.5  39.9 $
9900    6798  1.7  48.6  19.0b  1.2  31.2 Z$
9831   18070  4.4  58.1  13.1b  2.8  26.0 Z$
9830   20034  4.9  50.3  15.9b  0.7  33.1 Z$
9829    4116  1.0  52.5  13.5b  0.6  33.5 Z$
9828    3290  0.8  49.4   0.9b  0.0  49.7 $
9827    1940  0.5  50.8  21.1b  0.9  27.2 $
9826    1590  0.4  54.3  15.7b  0.6  29.3 $
9825     276  0.1  46.0   4.0b  0.0  50.0 $

70%  9913  315728  76.7  56.5  15.6   3.4  24.5 $ABCDEFGHIJKLM
V-A  9906

                                     %CTI1 %CTI2 %CTI3 %CTI4
Volume for T-BOND (CBOT) DAY      SEP 92  411838  55.6  15.6  2.9  25.8
Volume for all T-BOND (CBOT) DAY  420817  55.7  15.3  3.0  26.0
  
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As an aside, the exchange official volume reported for 7/08, 188530 (94265 x 2 for both sides), is considerably higher than the 166875 of the LDB. LDB is the volume after all matching is done, the cleared volume. When one sees the difference between the two, it becomes clear that decisions based on fine detailed calculations on the exchange official volume are asking more from the data than can reasonably be expected.

Table 2-4. Daily summary prices during a period of commercial (support) capping in the September T-bonds

	Open	High	Low	Close	Volume	
6/05/92	9905	9931	9903	9923	299688	<== Cap at 9906
6/08	9921	9924	9915	9924	64626	
6/09	9921	9929	9908	9910	129738	<== Cap at 9910
6/10	9909	9910	9900	9904	156695	
6/11	9831	9914	9825	9909	193879	<== Cap at 9827
6/12	9909	10003	9909	9920	219501	<== Cap at 9909

The capping on June 5, 9, and 12 were found in the same way as for Figure 2-6.

Commercial Support at a Price Far from the Close

In the T-bonds of June 11 (Figure 2-6), the commercials are capping the lows, creating commercial member activity in the T-bonds below Value (support). This cap will be seen to be one of a number of reaffirmations of a well-identified support level.

Column headings and markings are again the same as in Figure 2-3. Converting to volume and calculating the percentages as before, we find that, of the 15.6 percent of the total volume traded as %Cti2, the volume below the value area is 3.4 percent, inside is 12.0 percent, and above is 0.2 percent. Average values for the percentage above and below are 2.0 and inside is 12.0. So the 3.4 value below is 70 percent higher than usual for the volume below the value area ($3.4 = 1.7 \times 2.0$). Visually, we see heavy commercial activity from 9826 up to 9905, all the way up to the value area. This day is one of a series in which the commercials have set or reaffirmed support prices.

Table 2-4 shows that the commercials capped every time an opportunity was presented. On June 11, when the market traded down to 9825 shortly after the open, the commercials immediately jumped in, starting at 9826, and remained unusually active all the way on up until prices stabilized in A period (8 to 8:30 A.M.). Understanding commercial capping requires a "workout" period. If there is unusual commercial activity near the close it could be capping or it could be the commercials going with a change in value. Other evidence is required: the next day's trading, public volume in that region (available from the hourly LDB reports, see Chapter 3), breakout from a bracket (discussed in Chapter 4), etc. An interesting point is that the commercials in soybeans are

Figure 2-7. LDB report for September 1992 T-bonds, July 22, 1992

CHICAGO BOARD OF TRADE				LIQUIDITY DATA BANK* REPORT			
VOLUME/FUTURES SUMMARY REPORT FOR 07 22 92							
T-BOND (CBOT) DAY				SEP 92			
Volume Summary							
Price	Volume	%Vol	%Cti1	%Cti2	%Cti3	%Cti4	Brackets
10302	1560	0.4	53.5	6.5	0.5	39.5	L
10301	20768	5.1	54.6	14.3	1.9	29.0	LM
10300	15685	3.9	52.0	13.2	1.3	33.5	LM
10231	13379	3.3	56.2	5.7	1.9	36.2	L
10230	15302	3.8	49.8	19.4	0.8	30.1	JKL
10229	14486	3.6	52.0	18.6	1.8	27.7	IJKL
10228	43323	10.7	56.1	16.4	1.7	25.8	IJK
10227	23908	5.9	53.9	15.6	2.2	28.2	IJK < Breakout
10226	2072	0.5	50.2	26.4	0.9	22.5	IJ
10225	3134	0.8	39.4	14.2	1.9	44.5	I
10224	1599	0.4	37.3	19.2	0.6	42.9	I
10223	7818	1.9	38.2	13.2	1.0	47.7	EFGI
10222	34595	8.6	54.3	14.5	2.5	28.8	DEFGHI
10221	49848	12.4	59.1	16.2	2.0	22.7	DEFGHI
10220	32251	8.0	54.4	20.1	3.0	22.5	DEFGHI
10219	7628	1.9	56.8	18.1	1.7	23.3	DEFH
10218	1796	0.4	59.9	12.8	1.4	25.9	D
10217	6560	1.6	57.1	14.8	1.6	26.4	ZCD
10216	27490	6.8	50.5	17.2	1.7	30.7	ZCD
10215	6606	1.6	56.7	11.2	0.5	31.6	ZCD
10214	6752	1.7	67.6	14.3	2.8	15.3	Z\$ACD
10213	20640	5.1	60.9	14.7	2.8	21.6	Z\$AC
10212	22803	5.7	61.9	11.1	4.8	22.2	Z\$ABC
10211	19770	4.9	60.5	12.1	4.0	23.4	\$ABC
10210	3580	0.9	49.9	6.1	1.6	42.4	\$AB
70%	10228	322173	79.9	56.1	15.5	2.4	26.0 Z\$ABCDEFGHIJK
V-A	10210						
				%Cti1	%Cti2	%Cti3	%Cti4
Volume for T-BOND (CBOT) DAY SEP 92				403355	55.4	15.2	2.2 27.1
Volume for all T-BOND (CBOT) DAY				404565	55.4	15.2	2.2 27.1

responsible for about 4 percent of the volume, while in the T-bonds they control up to 16 percent of the trading. In the two markets their effect is the same. They identify support and resistance levels and, implicitly, value.

Commercial Trend Following

When a market's condition changes from bracketing to trending, the public traders are usually leading the breakout. Sometimes the commercials participate in the break, sometimes not. If the commercials do not join the trend, it is often because value has not changed and they are waiting to trade responsively and push the market back into a trading range. Commercials going with a breakout generally means that value has changed. The problem in using just LDB reports is that often one cannot recognize a breakout from one day's data. Later, in Chapters 5 and 6, a study of a period of trending in T-bonds is shown to start on July 22, 1992. The upside breakout price is 10227. Figure 2-7 is the LDB report for that day.

In Figure 2-7 the market is seen to be bound to trading in the range 10223 to 10210 from the open into I period (12:00 to 12:30 P.M.). During this time the commercial (Cti2) activity is about normal, even though there are two distributions (a "trend" day in Market Profile parlance). Later on, at higher prices, the commercial activity continues high. In balanced markets, commercial activity falls outside the value area. Since the longer-term breakout occurred at 10227, it is clear that the commercials are actively buying into the trend. Of course, the public is very active all the way up from 10223.

Conclusion

The LDB is the only source of volume at price. Identification of the class of trader who did the trading shows the internal dynamics of the market. Generally, trends are supported by the public (Cti4), which is reflected in the Cti4 volumes. This point will be made even clearer when one looks at the hourly updates in the next chapter.

The most productive class to study at first is the commercials. They are followed (almost slavishly) on the floor and they clearly have much to tell. The off-floor trader who understands the commercials can have a continual reading of value. The commercials' responsive trading provides a continually updated measure of local support or resistance. As value changes, as in a trend, the commercials are often to be seen leading the market to the new stability level. When markets break out of a balanced situation, continuous commercial activity outside the value area, as prices are moving, is strong evidence for the start of a trend.

Balanced markets that support responsive trading and the trends that result from breakouts are fairly short-term phenomena. Markets change over the longer term also. Today's "normal" volume divisions between

the classes of trader may well change. Commercials, in particular, can gradually become more or less active. Markets' characteristics, their responses to stimuli, undergo long-term "secular" change. Such longer-term behavior may be very important, as when total volume declines or grows; or when the floor trader (Cti1) volume drops relative to that of the other classes.

We have illustrated mostly shorter-term, immediate market activity. This information sets the stage for understanding the hourly LDBs of the next chapter and is used heavily in Chapter 5 on trade selection and in Chapter 6 on trader management. The longer-term information may prove useful for quite long (months or even years) analyses. One thing is sure: these fundamental data on market demand (volume) will support many more types of studies.

The Market Profile part of the LDB is much more qualitative, relying as it does on half-hourly time frames. But the qualitative element is the Market Profile's strength. It shows the structure of the market for the day. In Chapter 4, accumulations of profiles into Overlay Demand Curves will give both the structure of the overall market (the distribution) and its condition (bracketing or trending). The Overlay, in combination with the commercial data from the LDB, leads directly to Value in a form that provides the trader with clear market understanding.

3

The Hourly LDB: A New Tool for Day Traders

A typical day trader takes a position and then waits for the trade to “work out.” Most traders have found that “micromanaging” a day trade is poor technique; so “work out” means either a target is reached for a profit or a stop is hit for a loss.

New information from the Chicago Board of Trade hourly LDB lets the trader evaluate open day trades from cleared volumes released as the day proceeds. Trades that have stalled can often be recognized and eliminated. Successful trades can be reevaluated as the target is approached, with an eye toward continuing the trade beyond its initial target and/or turning it into a longer-term swing trade. Each hourly LDB report provides the cleared volume traded at each price by the commercial and the “public” members. (Commercial members, Cti2, trade only for their institutions, the public member, Cti4, fills orders for nonmembers.)

The volume traded and the period-to-period variations in these volumes can tell if a price move is supported and by whom. In Chapter 2, we used daily LDB reports to show how the commercials defined value by unusually heavy trading in certain price regions. That led to an understanding of how the commercials set support and resistance levels. Since the market is closed by the time the daily LDB reports are released, support/resistance levels found this way are applied the next day. Hourly data accelerates this process into the current day. Also, Public trading during breakouts can be recognized with the hourly LDB report and used in ways not possible with daily LDB reports.

Reference Points

End-of-day LDB and Market Profile reference points are presented in Chapter 2. With hourly LDB updates, we have the data as it accrues.

Those items giving early warning of change, that can be acted on during the current trading period, become paramount.

Total Volume

Cleared volume compared to former periods will show trader interest in the current day. Local peak volume points can be important, but the pace of clearing makes this difficult to measure accurately.

Volume by Trader Type

Typically, public trading clears before the others, so Cti4 volume can tell when the public is driving a move. Somewhat later, commercial volume can confirm or refute the public. In unusual cases, floor activity for the day will be much less than normal, indicating uncertainty about the market.

Market Profile TPOs

Since clearing lags from a few minutes to a TPO period or so, the day trader is well advised to have a separate source of profiles. This provides the difference between the cleared information and the up-to-date market trading, an important reference point. A Trade Facilitation Factor can be calculated from the ticker profile to estimate trading interest.

Public (Cti4) and Commercial (Cti2) Control

The public are the long-term traders, the ones who hold positions overnight and longer on a regular basis. Consequently, it is the public who moves markets. But the public is just a fraction of the total trading volume; in the T-bonds, typically around 26 percent. Breakouts are normally led by Cti4 volume; if not, there is usually something amiss. When the public volume wanes, the move has probably stalled.

Commercial traders are active in the market every day, doing company business (hedging, covering, etc.). Their trading is generally done in the day's most heavily traded price region, the value area. Being in the "trade," the commercials have a better knowledge of value than other traders. Our interest in commercial traders' volume is aroused when they become active at prices away from value. In a balanced, trading-range market, when price gets too far above or below value, commercials become speculators, selling at tops or buying at bottoms, and thus pushing price back toward the middle of the price range. In this way they

continually “cap” balanced markets. Such capping is called “responsive” trading; the trade is made in response to a market-offered opportunity. When value changes, leading to a breakout from a balanced market condition, the commercials are again observed to behave speculatively, this time buying an uptrend, selling the down. With daily LDB reports, value changes are sometimes difficult to define quickly. The new hourlies permit analysis of market moves as they occur within the day.

The Hourly LDB Report

The hourly LDB reports are arranged the same as the dailies in Chapter 2, except for the time frame covered. Figure 3-1 is an hourly. Price is on the vertical axis, volume at price is the next column. The following columns are %VOL, which is the percentage of the total reported volume that occurred at that price, and then %Cti1, %Cti2, %Cti3, %Cti4, which are the percentages of the volume at that price generated by floor traders, commercials, off-floor members, and the public, respectively. The last column, labeled Brackets, shows the Market Profile, a half-hour bar chart collapsed onto the vertical axis (Z represents trading from 7:20 to 7:30 A.M., \$ goes from 7:30 to 8:00 A.M., A is 8:00 to 8:30 A.M., and so forth, with M being the last period, 2:00 to 2:05 P.M.). Not shown is the value area, that price region containing the central 70 percent of volume, in this case the price range 10612 to 10616.

Breakout Analysis

Day traders have their own individual ways of determining their trading parameters. We will illustrate the application of LDB volume analysis by setting a “base” from which to measure the beginning of a day move, a breakout. That base, for convenience, we take to be the price range of the trading from 7:20 A.M. to 8:30 A.M., Market Profile symbols Z, \$, A. Then, as cleared volume becomes available, we analyze breakouts in terms of volume behavior of the commercial and public member types. Our results will show if the public is supporting the move, and at which of the traded prices; if the commercials are active and whether they are acting to cap price or are going with a trend.

The information we develop can be applied by any day trader. The key elements are identifying the behavior of commercial and public volumes. Two cases will be discussed, a breakout with public and/or commercial support and a breakout where there is no public/commercial support.

Figure 3-1. First download of LDB hourly for March 1993 T-bonds, 8:45 A.M., January 25

For download number 1 which occurred at 08:45 :

CBOT VOLUME REPORT

TRADING BEGINS 0720 (CST); CLOSES 1405; TPO SYMBOLS ARE Z\$ABCDEFGHIJKLM
FIRST PERIOD IS 10 MINS; SUBSEQUENT PERIODS ARE ALL 30 MINS

PRICE	VOLUME	%VOL	%Cti1	%Cti2	%Cti3	%Cti4	BRACKETS(*)
10621	10	0.2	50.0	0.0	0.0	50.0	\$
10620	112	1.9	68.8	4.5	0.0	26.8	\$
10619	176	2.9	64.2	17.0	2.8	15.9	\$
10618	186	3.1	69.9	0.0	0.0	30.1	\$AB
10617	36	0.6	72.2	0.0	0.0	27.8	\$AB
10616	252	4.2	57.1	29.8	0.0	13.1	Z\$AB
10615	1336	22.1	47.3	22.5	0.1	30.2	Z\$A
10614	2214	36.7	55.6	17.5	2.0	24.9	Z\$
10613	1704	28.2	58.6	10.3	0.6	30.5	Z\$
10612	10	0.2	100.0	0.0	0.0	0.0	Z
							%Cti1 %Cti2 %Cti3 %Cti4
VOLUME FOR MAR 93 US T BOND (CBOT) DAY				6036	55.8	16.1	1.0 27.1
VOLUME FOR ALL US T BOND (CBOT) DAY				8026	46.5	17.6	2.7 33.2

This data sets the base for future comparisons. Experience shows that trading by the commercials at 16.1 percent and 27.1 percent by the public are about average for this contract. The ticker and the LDB showed the same price range. Value area: 10612-10616. The base is set at 10612 to 10621.

Rules for Breakouts

There is a flurry of activity for a period of time after the open when accumulated orders and other new business is transacted. Profile theory identifies this as the first two periods of the day, called the "initial balance." In the T-bonds, the first hourly download at about 8:45 A.M. includes trading through about 8:30; so we take as our base for this example, the period from opening to 8:30 A.M., with TPOs Z, \$, A. A price above the base is an upside breakout, price below the base is a downside breakout. Commercial capping is characterized by large trading volumes at or near the extremes of range. Both commercial and public support of a trend are seen by high volume throughout the breakout price range. We assume that the trader has access to quotes.

Figure 3-2. Second download of LDB hourly for March 1993 T-bonds, 10:06 A.M., January 25

For download number 2 which occurred at 10:06 :

PRICE	VOLUME	%VOL	%Cti1	%Cti2	%Cti3	%Cti4	BRACKETS(+)
10621	582	0.8	53.1	20.4	0.0	26.5	\$CD
10620	5110	6.8	53.7	15.0	4.6	26.6	\$BCD
10619	8160	10.8	64.6	5.8	2.3	27.2	\$BC
10618	11462	15.1	58.0	13.1	3.2	25.7	\$ABC
10617	9114	12.0	62.5	10.7	3.2	23.7	\$ABC
10616	6658	8.8	55.9	13.9	2.6	27.7	Z\$AB
10615	14674	19.4	63.6	13.1	2.7	20.5	Z\$AB
10614	9372	12.4	58.0	15.1	1.5	25.4	Z\$
10613	10472	13.8	59.7	10.0	2.3	27.9	Z\$
10612	70	0.1	67.1	0.0	0.0	32.9	Z
			%Cti1	%Cti2	%Cti3	%Cti4	
VOLUME FOR MAR 93 US T BOND (CBOT) DAY			75674	60.1	12.1	2.7	25.1
VOLUME FOR ALL US T BOND (CBOT) DAY			79192	58.8	12.3	2.8	26.2

Download 2 shows trading constrained to the initial base. However, the ticker high is 10625, indicating a breakout from the base sometime during C or D period (9:00 to 10). Actually, price traded above 10621 consistently, starting about 9:25.

Case 1A. A Breakout with Commercial and Public Support

U.S. T-bonds, day, March 1993, January 25, 1993, 10:06 download

According to the rules above, we assume the trader took a long position on the breakout, at 10622. Since the clearing has not caught up, however, we must wait until the next report, expected about 11 A.M., to analyze the volume activity of the commercials and public.

Commercial volume percentage above the base is 25.4, compared to the day's average of 12.7. Public (Cti4) volume is also above average. Heavy commercial trading at 10622 could have been responsive selling as price broke out, or commercial buying into the upward trend. If responsive selling controlled, price would have stalled and quickly turned down. It is possible that the commercials did attempt to sell responsively at 10622. If that was the case, they failed because of buying pressure from the public (Cti4). The commercials can be wrong on occasion.

Figure 3-3. Third download of LDB hourly for March 1993 T-bonds, 10:57 A.M., January 25

For download number 3 which occurred at 10:57 :

PRICE	VOLUME	%VOL	%Cti1	%Cti2	%Cti3	%Cti4	BRACKETS(*)
10624	282	0.2	50.0	8.9	0.4	40.8	DEF
10623	294	0.2	51.0	13.6	0.0	35.4	CDEF
10622	3028	2.3	39.4	28.1	6.8	25.7	CDEF <== Breakout
10621	4510	3.5	47.3	11.2	4.5	37.0	\$CD
10620	8324	6.4	53.0	12.3	3.7	31.0	\$BCD
10619	17902	13.8	60.3	8.6	3.0	28.2	\$BC
10618	20968	16.2	57.9	16.5	2.7	22.9	\$ABC
10617	19976	15.4	63.0	10.7	4.9	21.5	\$ABC
10616	14150	10.9	56.1	12.4	3.7	27.8	Z\$AB
10615	16192	12.5	63.8	13.2	2.7	20.3	Z\$AB
10614	12080	9.3	58.0	15.7	1.3	25.1	Z\$
10613	11640	9.0	58.5	9.2	4.2	28.0	Z\$
10612	70	0.1	67.1	0.0	0.0	32.9	Z
			%Cti1	%Cti2	%Cti3	%Cti4	
VOLUME FOR MAR 93 US T BOND (CBOT) DAY			129416	58.5	12.7	3.4	25.4
VOLUME FOR ALL US T BOND (CBOT) DAY			133834	57.7	12.9	3.4	26.0

Download 3 now has volume information about the trading above the base (above 10621). Prices to 10624 have been cleared, but the ticker shows a high of 10629.

With the strong public activity and a (possibly) failed commercial responsive foray, the breakout is much more likely to be confirmed by further advances. The evidence from the LDB is that the breakout is being led by the public (as expected) with the commercials, who are apparently aware of an increase in value, at least at 10623, jumping in also. Normally, the commercials trade in a burst, so we would expect the heavy commercial trading to die out at higher prices. That in fact happens by the 1:30 P.M. (midday) release (not shown).

This day is a clear case of a running market where the responsive day trader with the normal target would have missed much of the move. A target of about \$200 or six points (10627) would have been liquidated before 11 A.M. By deferring a decision until the 11 A.M. report, evidence of the strong market could persuade the trader to continue the trade (close was 10707, gain is \$550). In any case, the trader has additional information with which to manage the trade, adding a new dimension to day trading.

Table 3-1. Percentages of commercial and public activity above breakout

Price	Volume	%Cti2	Cti2 volume	%Cti4	Cti4 volume
10624	282	8.9	25	40.8	115
10623	294	13.6	40	35.4	104
10622	3,028	28.1	851	25.7	778
Total	3,604		916		997
Percent Cti2 above: $916/3604 \times 100 = 25.4$					
Percent Cti4 above: $997/3604 \times 100 = 27.7$					

Figure 3-4. First download of volume analysis for March 1993 T-bonds, 8:51 A.M., January 7, 1993

For download number 1 which occurred at 08:51 :

CBOT VOLUME REPORT

TRADING BEGINS 0720 (CST); CLOSES 1405; TPO SYMBOLS ARE Z\$ABCDEFGHIJKLM
FIRST PERIOD IS 10 MINS; SUBSEQUENT PERIODS ARE ALL 30 MINS

PRICE	VOLUME	%VOL	%Cti1	%Cti2	%Cti3	%Cti4	BRACKETS(*)
10509	177	1.3	27.7	0.0	0.0	72.3	Z
10508	1838	13.2	33.4	26.0	1.6	39.0	Z
10507	3533	25.4	50.8	10.7	7.6	30.8	Z
10505	636	4.6	48.4	4.1	0.2	47.3	\$A
10504	1718	12.4	58.1	2.4	0.9	38.5	\$AB
10503	994	7.2	60.4	25.3	1.5	12.9	\$AB
10502	2204	15.9	38.0	26.2	2.4	33.4	\$AB
10501	1838	13.2	55.4	5.5	0.0	39.1	\$AB
10500	954	6.9	50.0	0.0	0.0	50.0	\$B
			%Cti1	%Cti2	%Cti3	%Cti4	
VOLUME FOR MAR 93 US T BOND (CBOT) DAY			13892	48.2	13.3	2.8	35.7
VOLUME FOR ALL US T BOND (CBOT) DAY			14730	48.5	12.9	2.7	35.9

The first report has a range of 10500 to 10509. However, the ticker shows a downside breakout around 8:45, in B period. By the rules above, the day trader comes into the report short. Since there is no clearing below 10500, we must wait for the 10 A.M. report to do the analysis. At the time of this release the market stood at 10429.

Figure 3-5. Second download of volume analysis for March 1993 T-bonds, 10:08 A.M., January 7, 1993

For download number 2 which occurred at 10:08 :

PRICE	VOLUME	%VOL	%Cti1	%Cti2	%Cti3	%Cti4	BRACKETS(*)
10509	197	0.2	29.4	0.0	1.0	69.5	Z
10508	4136	4.5	48.7	11.9	1.3	38.2	Z
10507	6903	7.5	57.7	9.4	5.5	27.4	Z
10505	4846	5.3	59.3	5.5	1.1	34.1	\$A
10504	15244	16.6	58.0	12.5	2.4	27.2	\$AB
10503	24938	27.1	61.7	13.5	1.8	23.0	\$AB
10502	23928	26.0	59.9	14.4	2.8	23.0	\$AB
10501	10326	11.2	57.3	12.0	3.1	27.6	\$AB
10500	1386	1.5	52.7	0.4	0.1	46.8	\$B
10431	2	0.0	50.0	0.0	0.0	50.0	B <== Breakout
10430	14	0.0	50.0	0.0	21.4	28.6	B
10429	6	0.0	50.0	0.0	50.0	0.0	B
10428	40	0.0	50.0	0.0	0.0	50.0	B
10427	16	0.0	50.0	0.0	0.0	50.0	B
10426	14	0.0	85.7	0.0	0.0	14.3	BC
10425	8	0.0	50.0	0.0	12.5	37.5	BCD
10424	8	0.0	75.0	25.0	0.0	0.0	BCDE

%Cti1 %Cti2 %Cti3 %Cti4

VOLUME FOR MAR 93 US T BOND (CBOT) DAY	92012	58.9	12.4	2.5	26.3
VOLUME FOR ALL US T BOND (CBOT) DAY	95742	58.8	12.3	2.5	26.3

The trade position is short and the ticker shows a low of 10420 with a latest trade at 10424. Several items are apparent: Trading volume is very low, with the floor traders (Cti1) selling mostly to the public (Cti4). The commercials (Cti2) are very quiet; they clearly are not indulging in responsive buying according to this report.

Case 1B. A Public- (Cti4-) Driven Breakout

U.S. T-bonds, day, March 1993, January 7, 1993

The T-bonds are noted for rapid shifts in value. The market of January 7 is such a case.

The price 10420 remained the low until I period (12:00 to 12:30); in the meantime trading was confined in a narrow range with a high of 10427. Hourly reports for 11:00 A.M. and noon continued to confirm control by the public. After that, price continued down, closing at 10403. The entire day LDB is shown in Figure 3-6.

Figure 3-6. Final hourly download of volume analysis for March 1993 T-bonds, 3:46 P.M., January 7, 1993

For download number 8 which occurred at 15:46 :

PRICE	VOLUME	%VOL	%Cti1	%Cti2	%Cti3	%Cti4	BRACKETS(*)
10508	5626	1.3	47.7	8.8	1.1	42.4	Z
10507	7727	1.8	57.5	9.7	5.6	27.2	Z
10505	6698	1.5	56.1	6.1	1.6	36.3	\$A
10504	20838	4.8	58.0	10.9	2.3	28.8	\$AB
10503	35186	8.1	61.2	13.9	2.0	22.9	\$AB
10502	34440	8.0	59.5	12.2	2.7	25.7	\$AB
10501	20668	4.8	58.9	10.6	2.7	27.8	\$AB
10500	8348	1.9	53.4	5.3	0.7	40.6	\$B
10431	2732	0.6	66.6	3.1	1.5	28.7	B
10430	10438	2.4	54.2	6.7	2.5	36.6	B
10429	6718	1.6	57.7	8.4	1.8	32.1	B
10428	3256	0.8	54.4	7.1	1.6	36.9	B
10427	3954	0.9	51.3	14.7	1.5	32.5	BGH
10426	21556	5.0	54.9	17.6	1.8	25.8	BCFGH
10425	37328	8.6	60.2	10.1	3.6	26.1	BCDEFGH
10424	49698	11.5	60.3	10.5	2.4	26.8	BCDEFGH
10423	22650	5.2	56.9	10.6	4.0	28.5	BCDEFHI
10422	42492	9.8	58.2	9.2	2.0	30.5	CDHI
10421	25246	5.8	57.2	10.5	0.9	31.3	CDHIJ
10420	16572	3.8	52.9	11.1	2.4	33.6	CHIJK
10419	16576	3.8	60.2	10.4	1.5	27.9	IJK
10418	10500	2.4	60.1	7.0	1.7	31.2	IJK
10417	9126	2.1	61.7	14.3	2.2	21.8	JKL
10416	2356	0.5	41.1	0.2	0.3	58.4	JKL
10415	574	0.1	58.4	12.2	1.7	27.7	L
10414	866	0.2	55.0	5.9	1.4	37.8	L
10413	624	0.1	52.2	8.0	2.2	37.5	L
10412	1834	0.4	54.0	11.6	3.5	30.9	L
10411	3410	0.8	64.3	12.5	1.3	21.9	L
10410	1046	0.2	53.8	0.6	0.4	45.2	L
10409	232	0.1	75.9	0.0	0.9	23.3	L
10408	236	0.1	57.6	0.0	0.4	41.9	L
10407	174	0.0	82.2	0.0	8.6	9.2	L
10406	88	0.0	70.5	0.0	0.0	29.5	L
10405	650	0.2	53.2	0.0	2.3	44.5	L
10404	1296	0.3	54.8	4.7	2.2	38.3	LM
10403	676	0.2	64.5	7.4	0.6	27.5	LM
10402	326	0.1	65.6	14.7	1.2	18.4	LM
10401	88	0.0	58.0	1.1	0.0	40.9	LM
							%Cti1 %Cti2 %Cti3 %Cti4
VOLUME FOR MAR 93 US T BOND (CBOT) DAY			432849	58.2	10.7	2.3	28.8
VOLUME FOR ALL US T BOND (CBOT) DAY			428248	58.3	10.7	2.3	28.7

Case 2. A Breakout without Commercial or Public Support

U.S. T-bonds, day, March 1993, January 8, 1993

The T-bond market of January 8, 1993, developed a large (25-tick) base in the range 10318–10409 during the Z, \$, A base period. Normal bases have ranges of around 16 points, so the day trader should already be wary. Such large ranges early in the day tend to hold.

Figure 3-7. First report of LDB hourly for March 1993 T-bonds, 8:50 A.M., January 8, 1993

For download number 1 which occurred at 08:50 :

TRADING BEGINS 0720 (CST); CLOSES 1405; TPO SYMBOLS ARE Z\$ABCDEFGHIJKLM
FIRST PERIOD IS 10 MINS; SUBSEQUENT PERIODS ARE ALL 30 MINS

PRICE	VOLUME	%VOL	%Cti1	%Cti2	%Cti3	%Cti4	BRACKETS(%)
10409	6	0.1	50.0	0.0	0.0	50.0	\$
10408	2	0.0	50.0	0.0	0.0	50.0	\$
10407	116	1.3	50.0	6.0	0.0	44.0	\$
10406	218	2.4	6.9	46.3	0.0	46.8	\$
10405	10	0.1	50.0	50.0	0.0	0.0	\$
10404	2	0.0	100.0	0.0	0.0	0.0	\$
10403	62	0.7	51.6	0.0	0.0	48.4	\$
10402	1725	19.3	4.2	10.0	0.9	84.9	\$
10401	1996	22.3	36.5	23.7	1.1	38.7	\$
10400	803	9.0	13.1	2.0	4.6	80.3	\$
10331	1068	11.9	28.7	2.9	14.6	53.8	\$
10330	362	4.0	80.4	0.0	6.9	12.7	\$
10329	31	0.3	64.5	0.0	35.5	0.0	\$A
10328	16	0.2	93.8	0.0	0.0	6.3	\$A
10327	306	3.4	46.7	4.9	0.0	48.4	Z\$A
10326	580	6.5	48.1	3.6	0.2	48.1	Z\$A
10325	1070	12.0	55.9	29.9	0.2	14.0	Z\$AB
10324	560	6.3	53.9	0.2	0.0	45.9	Z\$AB
10322	10	0.1	100.0	0.0	0.0	0.0	\$AB
10320	2	0.0	0.0	0.0	0.0	100.0	\$
			%Cti1	%Cti2	%Cti3	%Cti4	
VOLUME FOR MAR 93 US T BOND (CBOT) DAY			8945	33.4	13.0	3.0	50.6
VOLUME FOR ALL US T BOND (CBOT) DAY			9053	33.6	12.8	3.0	50.6

The base set for the next release comparisons already extends from 10318 to 10409 (ticker had a low of 10318). Commercial percentage of 13.0 is about normal, but the public at 50.6 percent is extremely large. The public traders are the ones who drive trends; they may have gotten most of their trading done early in the day. Value area is 10327 to 10403.

This is the last report before the start of evening trading, an important piece of information for the trader still holding a position.

Figure 3-8. Second report of LDB hourly for March 1993 T-bonds, 10:14 A.M., January 8, 1993

For download number 2 which occurred at 10:14 :

PRICE	VOLUME	%VOL	%Cti1	%Cti2	%Cti3	%Cti4	BRACKETS(*)
10409	1542	1.2	52.8	29.1	0.0	18.1	\$
10408	6278	5.0	52.2	16.4	0.7	30.7	\$
10407	4098	3.2	60.0	18.7	0.6	20.7	\$
10406	4358	3.4	58.4	11.1	0.1	30.4	\$
10405	4754	3.8	39.9	11.7	0.1	48.2	\$
10404	4904	3.9	53.6	21.5	0.2	24.7	\$
10403	1328	1.1	52.5	31.6	0.3	15.7	\$
10402	6275	5.0	42.0	6.3	1.3	50.4	\$
10401	3812	3.0	53.1	17.7	0.7	28.5	\$
10400	2281	1.8	40.9	3.5	2.7	53.0	\$
10331	2202	1.7	45.2	1.8	7.6	45.4	\$
10330	758	0.6	71.4	0.3	3.4	24.9	\$
10329	691	0.5	59.2	20.5	1.9	18.4	\$A
10328	4644	3.7	48.4	7.0	3.0	41.7	\$A
10327	8502	6.7	54.5	10.8	1.1	33.6	Z\$A
10326	19204	15.2	54.2	14.2	1.3	30.3	Z\$ABCD
10325	14170	11.2	61.0	7.7	1.5	29.7	Z\$ABCD
10324	14052	11.1	57.7	7.7	0.8	33.8	Z\$ABCD
10323	5726	4.5	54.9	12.4	2.4	30.4	\$ABCD
10322	4802	3.8	56.9	9.5	0.2	33.4	\$ABCD
10321	3864	3.1	55.8	3.4	0.5	40.3	\$BCD
10320	3344	2.6	60.6	17.6	0.4	21.5	\$CD
10319	4094	3.2	52.3	10.0	0.8	36.8	\$CD
10318	660	0.5	44.7	3.6	0.0	51.7	\$CD
							%Cti1 %Cti2 %Cti3 %Cti4
VOLUME FOR MAR 93 US T BOND (CBOT) DAY				126343	54.1	11.5	1.2 33.2
VOLUME FOR ALL US T BOND (CBOT) DAY				126715	54.2	11.5	1.2 33.2

Download 2 shows trading constrained to the initial base. However, the ticker low is 10315, indicating a breakout from the base (at 10317) sometime during C or D period (9:00 to 10:00). We must await the next release to see if the breakout is supported by the public or commercial volumes.

Figure 3-9. Third report of LDB hourly for March 1993 T-bonds, 11:10 A.M., January 8, 1993

For download number 3 which occurred at 11:10 :

PRICE	VOLUME	%VOL	%Cti1	%Cti2	%Cti3	%Cti4	BRACKETS(*)
10409	2696	1.0	53.6	24.8	1.7	19.9	\$
10408	9136	3.5	54.7	12.3	0.6	32.5	\$
10407	7044	2.7	55.2	17.9	0.9	26.0	\$
10406	6254	2.4	59.7	8.7	1.1	30.5	\$
10405	6230	2.4	42.3	11.9	0.4	45.4	\$
10404	6436	2.5	54.8	19.7	1.0	24.5	\$
10403	2084	0.8	53.2	20.1	1.5	25.1	\$
10402	7683	2.9	44.1	7.2	1.2	47.5	\$
10401	5726	2.2	52.4	13.8	2.3	31.6	\$
10400	3065	1.2	43.9	5.1	2.0	49.0	\$
10331	3104	1.2	47.0	6.4	5.7	40.9	\$
10330	1764	0.7	58.8	10.9	2.9	27.4	\$E
10329	1263	0.5	58.7	24.7	1.0	15.6	\$AEF
10328	11258	4.3	59.5	7.4	2.7	30.4	\$AEF
10327	15132	5.8	56.6	10.2	2.7	30.5	Z\$AEF
10326	31906	12.2	58.4	10.4	2.6	28.6	Z\$ABCDEF
10325	38602	14.8	60.1	10.7	2.3	26.9	Z\$ABCDEF
10324	35428	13.5	59.6	10.4	3.6	26.4	Z\$ABCDE
10323	23242	8.9	59.9	13.5	2.2	24.4	\$ABCDE
10322	17102	6.5	61.0	9.2	1.7	28.2	\$ABCD
10321	7798	3.0	57.5	5.4	1.8	35.3	\$BCD
10320	7568	2.9	58.6	11.6	0.9	29.0	\$CD
10319	6662	2.5	52.3	9.5	2.1	36.2	\$CD
10318	2128	0.8	49.9	6.6	0.4	43.1	\$CD
10317	348	0.1	56.3	8.9	2.9	31.9	CD
10316	1566	0.6	40.7	28.5	0.7	30.1	CD
10315	330	0.1	50.0	50.0	0.0	0.0	C

		%Cti1	%Cti2	%Cti3	%Cti4
VOLUME FOR MAR 93 US T BOND (CBOT) DAY	261555	57.1	11.2	2.2	29.6
VOLUME FOR ALL US T BOND (CBOT) DAY	262237	57.1	11.1	2.2	29.6

Download 3 now has volume information about the trading below the base (below 10318). Below the base, public trading is 25.9 percent and commercial shows 28.6 percent.

Since the public trading is less than the average, the public was not driving the breakout. Commercial volume was much greater than the average of 11.2 (Figure 3-9). It appears that the commercials were buying

at a price below value, capping the market (support) and forcing price back up. In this case, the report was too late to help the trader; price dipped in C period and moved back up in D period, before the third release.

The Responsive Day Trader

Market Profile theory and methodology relies heavily on the development characteristics of the profile throughout the day. As noted before, reading and predicting the developing market from the profile is very tough. Now there is a second level of information, volume by price and type of trader. Responsive traders are the opposite side of the coin from breakout traders. Whereas Case 2 above represents a failed breakout to the position trader, it can confirm a bracket to the day trader.

The responsive trader is looking for rejected prices to confirm the continued existence of a bracket. In Figure 3-9, download three showed a failed breakout for the March 1993 T-bond on January 8. That market had been bracketing with 5-, 10-, 15-, and 20-day brackets on January 6. Then, on January 7, the 5- and 10-day brackets had breakouts. Going into the 8th, the 20-day bracket showed limits of 10520 to 10321. Referring to Figure 3-9, the market opened at 10401, traded up to 10409 and then fell to 10315 by C period (9 to 9:30), breaking out as it dropped through 10321.

It is the rejection of the downside breakout that is of interest to the responsive day trader. False breakouts, in which price comes out of the bracket and quickly returns, signal potential opportunity. In this case, there was a real opportunity, for the market closed at 10329.

Conclusion

The advantages of the hourly LDB reports come from being able to "see" inside the market while it is still trading. Any commercial capping (setting resistance or support levels, as was apparent in Figure 3-9) becomes evident within an hour or so of its occurrence. Likewise, public trend driving becomes equally apparent. Understanding the market while it is still open naturally offers the trader the option of modifying a trade on the basis of the new knowledge.

The longtime desire of traders to know the volume within the day is now realized. There is still a time lag because the clearing process is in progress rather than complete at each release. Although these hourly LDB reports are currently the best and only source of volume within a trading day, with the coming automation of trading procedures on the exchange floors, time lags from trade to clearing will continue to decrease.

We have utilized one approach to analyzing trading volume, concentrating on the commercials (Cti2) and the public (Cti4). Information is contained in the behavior of the floor (Cti1) and off-floor (Cti3) members as well. We are sure that other fruitful ways of using the hourly LDBs will be discovered. The depth of the information is such that it will support many analyses.

There is one obvious use of the hourlies for the position trader: the same type of analysis that provides entry and exit points for the day trader may very well be used by a position trader who is ready to enter or exit a longer-term trade. Swing traders are well served by hourly LDBs because, as in Case 1B, a person with a position on at the end of the day can know a great deal about the market before the next trading session opens.

4

The Overlay Demand Curve™

The Overlay Demand Curve (Overlay) is a graphic, a distribution of the same form as the Market Profile of Chapter 2. Market Profiles give market structure and locate value for a single day in terms of the value area. Overlays do the same for the longer time frame, becoming, in a sense, a super profile. But Overlays do something profiles cannot; they define longer-term market condition (i.e., trending, bracketing, or volatile). If the market's condition is bracketing, value can be determined. For trending markets, value can only be inferred.

This combination—structure, condition, and value—provides the trader with market understanding. It allows the trader to make intelligent decisions based upon the current market, factoring in a knowledge of what is to be expected from the market and what to do if the unexpected occurs. In a nutshell, understanding the market permits low-risk trading.

Overlays are a linear accumulation, at each price traded, of volumes or volume surrogates such as TPOs or tick volume. (Volume at price is found in the LDB; TPOs and tick volume are available on all markets). TPOs can be generated from a live ticker as can tick volume. TPOs can also be obtained from the Market Profile. No matter the source of volume data, the process determines the name: data from a group of days are added together, or overlaid onto each other, period by period, day by day—hence they are “Overlays.”

The time period of the accumulation is selected by the trader to define the market condition for the term desired. Accumulation times can vary from a few minutes to many days. Major changes in market condition come at the beginnings or ends of trends, or when market volatility grows to the extent that trends cannot be differentiated from the brackets in trading-range markets. Minor changes in market condition often occur within a longer-term bracket, e.g., a short period of trending initiated by

market rumors. Sometimes minor trends lead to “false breakouts” from stable brackets, breakouts that are characterized by a price excursion outside the bracket followed by a quick return to the bracket. This is the way brackets widen.

On the first day after a trend ends, the entirety of the bracket is that day’s high–low range. The next day it widens into two days’ range; and so on, until the bracket is fairly wide and widening occurs only occasionally. Sometimes a trend will start deep within a bracket, wending its way through the bracket on a more or less direct course to breakout and continuing to trend. Thus, even in well-defined brackets it is necessary to monitor short-term internal behavior.

Historically, technicians have attempted to find the market’s condition from a combination of fundamentals, chart analysis, and numerical formulas such as moving averages. The problem with the latter is that the averaging of a number of trading days to smooth out the random market fluctuations (noise) introduces time lag. Lag comes from treating every price equally. Averaging moves the center of the distribution to the midpoint of the average (a five-day average has a center three days back). But not all prices are equal, as we saw in Chapter 2; a price with little volume at the top or bottom of a distribution does not have the importance of prices in the middle of the distribution.

Overlays have no problem with lag. As long as market condition has not changed, the frequency or volume of each price retains its relative importance in the distribution. In bracketing markets price rotates throughout the bracket range, spending more time in the “fair” market region, less at the extremes. The participants locate value by their votes, by trading mostly around value. Prices that deviate far from value, the highest and lowest prices in the distribution, get short shrift from traders. These prices are not popular and hence show little volume and few TPOs.

Reference Points

Overlays of brackets provide three primary reference points, the upper and lower bracket limits and the middle of the distribution, the center of value in a perfectly bell-shaped curve. Secondary reference points are the distribution quadrant and octant prices. These are used to estimate risk of particular trade positioning. In trends, Overlays identify the “nodes,”

those pauses in the run-pause scenario of most trends. Volume Overlays identify the high-volume point over the period of the Overlay. High-volume points often act as barriers within a day, reflecting prices.

TPO Overlays vs. Volume Overlays

Overlay Demand Curves are normally generated from volume data in the LDB reports or from TPOs. In principle, volume offers the closest link to demand; volume is a direct count of the amount traded in the marketplace. As noted earlier, volume at price is currently released only by the Chicago Board of Trade and the Chicago Mercantile Exchange. Volume-based Overlays cannot currently be generated for any other exchanges.

Cleared volumes are not necessarily a direct measure of demand. Much of a day's trading is between floor traders (Cti1), whose primary function is to provide liquidity to the market. Most floor traders go home with no positions and thus have little effect on demand. Floor traders are typically responsible for about half the total volume reported. So a sizeable fraction of the volume could be giving either the wrong signal or no signal at all. Tick volume suffers from the same malady.

TPO counts tend to be somewhat more straightforward in measuring activity. At price extremes where the public tends to dominate trading, the public is filled by the floor trader. As seen in Chapter 3, Figure 3-1, trading at 10621 is half floor, half public; the floor is servicing the public. Similarly, in Figure 3-5, most of the trading below 10500 is of this sort.

At the middle prices, where the floor is very active, limiting the TPOs to one per half-hour (at each price) tends to ensure that value is involved when a group of TPOs is created. Comparing Overlays from both LDB volume data and TPOs for the same trading period brings the differences into focus. Figures 4-1 and 4-2 compare TPOs with volume for T-bonds, with Figure 4-3 overlaying the TPOs onto the volume for added emphasis. A much more severe case is examined in Figure 4-4, where there are added problems from adjacent prices being differentially valued by traders.

Figure 4-1. Five-day Overlay Demand Curve for March 1993 T-bond, January 18-22, 1993, from profiles

TPO OVERLAY AND PRICE ROTATION PROFILE
MAR 93 T-BOND (CBOT) DAY, 01 18 93 TO 01 22 93 5 DAY

PRICE	DYS	L/F	ROT	PROFILE *	TPOS	TPO VOL	OVERLAY *
10612	1	7	7		1	X	
10611	1	7	7		1	X	
10610	1	7	7		1	X	
10609	1	7	7		1	X	
10608	1	7	7		3	XXX	<== Upper Bracket Limit
10607	2	7	57		5	XXXXX	
10606	2	7	57		5	XXXXX	
10605	2	7	57		9	XXXXXXXX	
10604	2	7	57		12	XXXXXXXXXX	
10603	2	7	57		18	XXXXXXXXXXXXXXXXXX	
10602	2	7	57		18	XXXXXXXXXXXXXXXXXX	
10601	2	7	57		21	XXXXXXXXXXXXXXXXXXXX	
10600	3	7	567		21	XXXXXXXXXXXXXXXXXXXX	
10531	4	7	4567		22	XXXXXXXXXXXXXXXXXXXX	<== Center of Value
10530	4	7	4567		20	XXXXXXXXXXXXXXXXXXXX	
10529	4	7	4567		16	XXXXXXXXXXXXXXXXXX	
10528	4	7	4567		15	XXXXXXXXXXXXXXXXXX	
10527	4	7	4567		16	XXXXXXXXXXXXXXXXXX	
10526	4	7	4567		13	XXXXXXXXXXXXXXXXXX	
10525	4	7	4567		10	XXXXXXXXXX	
10524	3		456		10	XXXXXXXXXX	
10523	3		456		10	XXXXXXXXXX	
10522	3		456		10	XXXXXXXXXX	
10521	2		46		12	XXXXXXXXXX	
10520	2		46		14	XXXXXXXXXXXXXXXXXX	
10519	2		46		15	XXXXXXXXXXXXXXXXXX	
10518	2		46		17	XXXXXXXXXXXXXXXXXX	
10517	2		46		17	XXXXXXXXXXXXXXXXXX	
10516	2		46		15	XXXXXXXXXXXXXXXXXX	
10515	3	3	346		15	XXXXXXXXXXXXXXXXXX	
10514	3	3	346		9	XXXXXXXXXX	
10513	3	3	346		11	XXXXXXXXXX	
10512	3	3	346		15	XXXXXXXXXXXXXXXXXX	
10511	3	3	346		12	XXXXXXXXXX	
10510	2	3	34		8	XXXXXXX	<== Lower Bracket Limit
10509	1	3	3		2	XX	

Prices in 32nds are in column 1, DYS is the day count at each price, L/F means last/first, where 3 is the last day back (January 18) and 7 refers to the first, or latest day, January 22. The column ROT PROFILE is a profile of whole days (as opposed to profiles of half-hour periods), the TPOS column is a count of the TPO events over the five-day period (e.g., at 10530 the TPO count of 20 events figures out to an average of 4 per day). Lastly, the Overlay graphic is an extension of the TPOs with each TPO represented by an X.

Figure 4-2. Five-day Overlay Demand Curve for March 1993 T-bond, January 18–22, 1993, from cleared volume

TRADED VOLUME OVERLAY AND PRICE ROTATION PROFILE						
MAR 93 T-BOND (CBOT) DAY, 01 18 93 TO 01 22 93 5 DAY						
PRICE	DYS	L/F	ROT	PROFILE *	TRD VL	TRADED VOL OVERLAY *
10612	1	8	8		354	X
10611	1	8	8		5972	XX
10610	1	8	8		13132	XXXXX
10609	1	8	8		8804	XXXXX
10608	1	8	8		11955	XXXXX
10607	2	8	68		28469	XXXXXXXXXXXXX
10606	2	8	68		44229	XXXXXXXXXXXXXXXXXX
10605	2	8	68		33500	XXXXXXXXXXXXXXXXXX
10604	2	8	68		56299	XXXXXXXXXXXXXXXXXXXXX
10603	2	8	68		98319	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
10602	2	8	68		73250	XXXXXXXXXXXXXXXXXXXXXXXXXXXXX
10601	2	8	68		76497	XXXXXXXXXXXXXXXXXXXXXXXXXXXXX
10600	3	8	678		97099	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
10531	4	8	5678		85073	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
10530	4	8	5678		74856	XXXXXXXXXXXXXXXXXXXXXXXXXXXXX
10529	4	8	5678		79180	XXXXXXXXXXXXXXXXXXXXXXXXXXXXX
10528	4	8	5678		76373	XXXXXXXXXXXXXXXXXXXXXXXXXXXXX
10527	4	8	5678		64352	XXXXXXXXXXXXXXXXXXXXXXXXXXXXX
10526	4	8	5678		73410	XXXXXXXXXXXXXXXXXXXXXXXXXXXXX
10525	4	8	5678		72616	XXXXXXXXXXXXXXXXXXXXXXXXXXXXX
10524	3		567		53380	XXXXXXXXXXXXXXXXXXXXX
10523	3		567		40570	XXXXXXXXXXXXX
10522	3		567		60615	XXXXXXXXXXXXXXXXXXXXX
10521	2		57		60174	XXXXXXXXXXXXXXXXXXXXX
10520	2		57		75607	XXXXXXXXXXXXXXXXXXXXX
10519	2		57		81789	XXXXXXXXXXXXXXXXXXXXX
10518	2		57		76332	XXXXXXXXXXXXXXXXXXXXX
10517	2		57		87351	XXXXXXXXXXXXXXXXXXXXX
10516	2		57		80672	XXXXXXXXXXXXXXXXXXXXX
10515	3	4	457		49571	XXXXXXXXXXXXX
10514	3	4	457		61675	XXXXXXXXXXXXXXXXXXXXX
10513	3	4	457		62567	XXXXXXXXXXXXXXXXXXXXX
10512	3	4	457		40396	XXXXXXXXXXXXX
10511	3	4	457		25022	XXXXXXXXXX
10510	2	4	45		11117	XXXXX
10509	1	4	4		138	X

In place of the TPOs column of Figure 4-1, there is now a TRD VL. Volume is counted as one for each side of a trade, so Liquidity Data Bank volumes are double the same actual trading volume reported in the daily volume reports in the newspapers.

Figure 4-3. Five-day Overlay Demand Curve for March 1993 T-bond, January 18–22, 1993, from cleared volume, showing TPO counts as dots (.)

TRADED VOLUME AND TPO OVERLAY AND PRICE ROTATION PROFILE

MAR 93 T-BOND (CBOT) DAY 01 18 93 TO 01 22 93 5 DAY

PRICE	DYS	L/F	ROT	PROFILE *	TRD VL	TRADED VOL	OVERLAY *
10612	1	8	8		354	.	
10611	1	8	8		5972	.X	
10610	1	8	8		13132	.XXXX	
10609	1	8	8		8804	.XXX	
10608	1	8	8		11955	...XX	
10607	2	8	68		28469	.....XXXXXX	
10606	2	8	68		44229	.....XXXXXXXXXX	
10605	2	8	68		33500	.....XXXX	
10604	2	8	68		56299	.....XXXXXXXXXX	
10603	2	8	68		98319	.....XXXXXXXXXXXXXXXXXXXX	
10602	2	8	68		73250	.....XXXXXXXXXX	
10601	2	8	68		76497	.....XXXXXXXXXX	
10600	3	8	678		97099	.....XXXXXXXXXXXXXXXXXXXX	
10531	4	8	5678		85073	.....XXXXXXXXXXXX	
10530	4	8	5678		74956	.....XXXXXXXXXX	
10529	4	8	5678		79180	.....XXXXXXXXXXXX	
10528	4	8	5678		76373	.....XXXXXXXXXXXX	
10527	4	8	5678		64352	.....XXXXXXXXXX	
10526	4	8	5678		73410	.....XXXXXXXXXXXX	
10525	4	8	5678		72616	.....XXXXXXXXXXXX	
10524	3		567		53380	.....XXXXXXXXXX	
10523	3		567		40570	.....XXXXXX	
10522	3		567		60615	.....XXXXXXXXXXXX	
10521	2		57		60174	.....XXXXXXXXXX	
10520	2		57		75607	.....XXXXXXXXXXXX	
10519	2		57		81789	.....XXXXXXXXXXXX	
10518	2		57		76332	.....XXXXXXXXXX	
10517	2		57		87351	.....XXXXXXXXXXXX	
10516	2		57		80672	.....XXXXXXXXXXXX	
10515	3	4	457		49571	.....XXXX	
10514	3	4	457		61675	.....XXXXXXXXXXXX	
10513	3	4	457		62567	.....XXXXXXXXXXXX	
10512	3	4	457		40396	.....X	
10511	3	4	457		25022	.....
10510	2	4	45		11117	.....
10509	1	4	4		138	..	

If the TPO count is as great as or greater than the volume X count, the volume X's are deleted.

Figure 4-4. Five-day Overlay Demand Curve for March 1993 wheat, January 18–22, 1993, from cleared volume, with TPO Overlay adjacent

TRADED AND TPO OVERLAYS AND PRICE ROTATION PROFILE						
MAR 93 WHEAT (CBOT)			01 18 93 TO 01 22 93 5 DAY			
PRICE	DYS	L/F ROT PROFILE *	TRD VL	TRADED VOL	OVERLAY *	TPOS
3930	2	67	630	X		X
3926	2	67	1720	XXX		XX
3924	2	67	8620	XXXXXXXXXXXXXX		XX
3922	2	67	3080	XXXX		XXX
3920	2	67	10020	XXXXXXXXXXXXXXX		XXXX
3916	3	678	2735	XXXXX		XXXXXX
3914	3	678	8270	XXXXXXXXXXXXXX		XXXXXX
3912	3	678	5695	XXXXXXX		XXXXXX
3910	3	678	9365	XXXXXXXXXXXXXXX		XXXXXX
3906	3	678	3730	XXXXX		XXXXXX
3904	3	678	12740	XXXXXXXXXXXXXXXXXXXX		XXXXXXXXXX
3902	4	9 6789	5325	XXXXXXX		XXXXXXXXXXXX
3900	4	9 6789	18255	XXXXXXXXXXXXXXXXXXXXXXXXXXXX		XXXXXXXXXXXX
3896	4	9 6789	12670	XXXXXXXXXXXXXXXXXXXX		XXXXXXXXXXXX
3894	4	9 6789	14825	XXXXXXXXXXXXXXXXXXXX		XXXXXXXXXXXX
3892	4	9 6789	9735	XXXXXXXXXXXXXXX		XXXXXXXXXXXX
3890	4	9 6789	10980	XXXXXXXXXXXXXXX		XXXXXXXXXXXX
3886	4	9 6789	6550	XXXXXXX		XXXXXXXXXX
3884	4	9 6789	17455	XXXXXXXXXXXXXXXXXXXXXXXXXXXX		XXXXXXXXXXXX
3882	4	9 6789	15165	XXXXXXXXXXXXXXXXXXXX		XXXXXXXXXXXX
3880	4	9 6789	24230	XXXXXXXXXXXXXXXXXXXXXXXXXXXX		XXXXXXXXXXXX
3876	3	9 689	12175	XXXXXXXXXXXXXXX		XXXXXXXXXXXX
3874	3	9 689	14980	XXXXXXXXXXXXXXXXXXXX		XXXXXXXXXXXX
3872	3	9 689	7445	XXXXXXX		XXXXXXXXXX
3870	3	9 689	14960	XXXXXXXXXXXXXXXXXXXX		XXXXXXXXXX
3866	3	9 689	8550	XXXXXXXXXXXX		XXXXXX
3864	1	6	2980	XXXXX		XXX
3862	1	6	1770	XXX		X
3860	1	6	3690	XXXXX		XX
3856	1	6	1530	XXX		XX
3854	1	6	1700	XXX		XX

Structurally, the Overlay in Figure 4-1 is a single distribution with center at 10531, with the possibility that the single distribution is composed of two separate ones with centers at 10531 and 10518 respectively. Since there is only a single distribution, and one that is reasonably regular, the market's condition is bracketing. Limits of the bracket are 10608 and 10510, which define the extent of the bracket. The rule for

locating limits is: there must be three or more TPOs for 5- and 10-day Overlays, five TPOs for longer ones. The high-value point lies at the peak TPO count; here it is 10531. Limits are significant because price movement out of the bracket past a limit alerts to change of condition, e.g., from bracketing to trending. A market in a bracketing condition permits location of value, an item of particular importance to the day trader.

The Rotation Profile (ROT PROFILE) offers a qualitative measure of the price rotation component of the Overlay. Markets in brackets are expected to rotate throughout the price range of the bracket. In this case, the earliest day (3) covered the price range 10515 to 10509, next day (4) went from 10510 up to 10531, the next day (5) backtracked to as low as 10522 and as high as 10607, the next day (6) ranged from 10600 clear down to 10511, and the last day (7) from 10525 to 10612. This very active rotation within a confined price range, the bracket, indicates a liquid market. The upper and lower limits and value are three of the most important reference points that are used in market understanding.

The structure of the distributions in Figure 4-1 and 4-2 are quite similar in general outline. They differ markedly in detail. Volume distributions, as in Figure 4-2, are often harder to read than TPO distributions, as in Figure 4-1; the high-value price is harder to locate, as are limits. The differences between the TPO count and volume are easily seen when the two are compared line by line, as in Figure 4-3.

TPO and volume Overlays are different ways of measuring the same thing. The general structure is obviously the same, but with volume the structure is more "ragged" (compare, for example, the Overlays at prices 10603, 10527, 10515 in Figure 4-1 and 4-2). The smoothness of the TPO Overlay is an even larger advantage in markets such as the grains. Wheat, soybeans, and corn all have odd trading behavior on quarter-cents. Wheat is shown in Figure 4-4 with a volume Overlay on the left, and its TPO counterpart on the right.

The obvious irregularity in volume from price to price is a result of preferential trading prices in the grains. The quarter- and three-quarter-cent prices are not as popular for trading as half-cents. Certain "improvements" can be made: the trading at the quarters can be added to the halves, resulting in a graphic without quarter-cent points, or the quarter-cents can be ignored completely. Adjusting the quarters, however, brings in a distortion of its own. Not all quarter-cent points receive the same treatment by the market, as shown in Table 4-1, which posts the volume at the quarters as a percentage of the volume at the half-cent point just above.

In the comparisons of Table 4-1, the quarter-cent volumes ranged from a high of 87 percent of the contiguous half-cent volume to as low as 27 percent, more than a factor of three. These data illustrate that near value, a quarter-cent is more important to traders than far from value.

Traders will trade at quarter-cents to get an edge if volume is high, because they can afford to; after all, a quarter-cent in wheat is \$12.50. With clearing costs at \$2.00 per, the floor member will trade for quarters all day. At low volume, away from value, quarter-cent trades are rarer because there are fewer takers for the bids.

A basic difficulty caused by the asymmetries of volume Overlays is their effect on determining value. Different treatments give different answers. In Figure 4-3, the peak volume in T-bonds is at 10603, on the edge of the distribution, while peak TPO count came at 10531, much nearer the center of the principal lobe of the distribution. For wheat in Figure 4-4, the TPO Overlays have a smooth, well-defined distribution compared to the volume distribution, which could easily be interpreted as several distributions.

An observed characteristic of the volume Overlays is that the high-volume price often acts as a barrier within a day. Prices tend to reflect off the barrier. As long as market condition does not change, the high-value point behaves as a resistance to prices below it and a support to those above.

TPO Overlays are automatically smoothed by time. Only one event can be measured at a particular price in any half-hour period. Multiple TPOs at a price indicate that the market returned to that price region throughout the time frame of the Overlay. Consequently, TPO distributions are smoother and easier to read and use. Furthermore, all markets can be analyzed with TPO Overlays, whereas volumes are available only for the Chicago Board of Trade and the Chicago Mercantile Exchange. Another benefit of the TPO Overlay is that it can be updated during the day. TPOs for the current day can be added to an Overlay as they develop, as in Figure 4-5.

Theory

Overlay Demand Theory relies on many of the same principles as Auction Market Theory (CBOT 1984; Dalton, Jones, and Dalton 1990; Steidlmayer and Buyer 1986; Steidlmayer and Koy 1986). It assumes that the fundamental economics of supply and demand govern the behavior of the market. Fundamentals include basic economics and other not-so-basic items such as widely followed chart formations, moving averages, rumors, etc. Anything affecting value is included.

Table 4-1. Fractional volume comparisons for the March 1993 wheat contract of Figure 4-4

		Fraction (%)
3930	630 X	
3926	1720 XXX	
3924	8620 XXXXXXXXXXXXX	100
3922	3080 XXXXX	36
3920	10020 XXXXXXXXXXXXXXXXX	100
3916	2735 XXXXX	27
3914	8270 XXXXXXXXXXXXX	100
3912	5695 XXXXXXXXX	69
3910	9365 XXXXXXXXXXXXXXXXX	100
3906	3730 XXXXXX	40
3904	12740 XXXXXXXXXXXXXXXXXXXXX	100
3902	5325 XXXXXXXXX	42
3900	18255 XXXXXXXXXXXXXXXXXXXXXXXXX	100
3896	12670 XXXXXXXXXXXXXXXXXXXXX	70
3894	14825 XXXXXXXXXXXXXXXXXXXXXXXXX	100
3892	9735 XXXXXXXXXXXXXXXXX	66
3890	10980 XXXXXXXXXXXXXXXXX	100
3886	6550 XXXXXXXXXX	60
3884	17455 XXXXXXXXXXXXXXXXXXXXXXXXX	100
3882	15165 XXXXXXXXXXXXXXXXXXXXXXXXX	87

Each entry in the column Fraction (%) is the percentage that the lower (quarter-cent) volume is of the upper (half-cent) volume.

Fundamentals

In the ideal situation (for the analyst), the fundamentals would drive a market linearly: say the price of wheat is inversely proportional to the total production. If production is halved (drought, war, etc.), price would double (price = $P/\text{production}$, or price = $P/0.5$, or price = $2 \times P$; where P is a constant, say \$3.50 per bushel).

Experience tells us that this is not what happens. As the news starts filtering out about the drought, or whatever, some users of wheat will start looking for substitutes, some will leave the market for a period of time (remember the seven good years and seven bad years in biblical Egypt?), with only those who must have wheat (bakers) staying the course. The fundamentals will have changed in many different ways in response to the changes in the market. This shows that the supply/demand function is not linear at all. It is complicated by feedback and

Figure 4-5. Five-day TPO Overlay for December 1992 T-bonds, November 25, with the next day's market (11/27) TPOs added through period I (12:00–12:30)

TPO OVERLAY AND PRICE ROTATION PROFILE					
MAR 93 T-BOND (CBOT) DAY 11 19 92 TO 11 25 92					
Updated with TPOs from Trading on November 27					
PRICE	DYS	L/F	ROT	PROFILE *	TPOS TPO VOL OVERLAY *
10300	1	T	T		1 X
10231	2	TX	TX		2 XX
10230	2	TX	TX		2 XX
10229	2	TX	TX		2 XX Z\$
10228	2	TX	TX		2 XX Z\$
10227	3	TX	TWX		4 XXXX \$AB <== Upper Bracket Limit 11/25
10226	3	TX	TWX		7 XXXXXXX \$AB
10225	4	TX	TUWX		18 XXXXXXXXXXXXXXXXXXXX \$ABC
10224	4	TX	TUWX		23 XXXXXXXXXXXXXXXXXXXX BC
10223	4	TX	TUWX		25 XXXXXXXXXXXXXXXXXXXX C <== Close 11/25
10222	4	TX	TUWX		27 XXXXXXXXXXXXXXXXXXXX C
10221	4	TX	TUWX		22 XXXXXXXXXXXXXXXXXXXX C
10220	4	TX	TUWX		24 XXXXXXXXXXXXXXXXXXXX C
10219	4	TX	TUWX		20 XXXXXXXXXXXXXXXXXXXX C
10218	5	TX	TUVWX		18 XXXXXXXXXXXXXXXXXXXX C
10217	5	TX	TUVWX		17 XXXXXXXXXXXXXXXXXXXX C
10216	5	TX	TUVWX		19 XXXXXXXXXXXXXXXXXXXX C
10215	4	T	TUVW		19 XXXXXXXXXXXXXXXXXXXX CD
10214	4	T	TUVW		18 XXXXXXXXXXXXXXXXXXXX CD
10213	4	T	TUVW		16 XXXXXXXXXXXXXXXX CD
10212	4	T	TUVW		8 XXXXXXXX CD
10211	3		UVW		7 XXXXXX CD
10210	2		VW		5 XXXX DE
10209	2		VW		3 XXX DEF
10208	1		W		2 XX DEF
10207	1		W		2 XX EF <== Lower Bracket Limit 11/25
10206	1		W		1 X F <== Downside Breakout 11/27
10205	1		W		1 X FG
10204	1		W		1 X FG
10203					FG
10202					G
10201					GH
10200					GHI
10131					HI <== Close 11/27
10130					HI
10129					H
10128					H

The five-day Overlay bracket experienced a downside breakout at 10:35 (F period 10:30 to 11:00).

nonlinear effects that make it virtually impossible to understand in detail.

True, we know that there is some relationship between production and price, but we ordinary people will not even know of changes in the situation until it is too late to do much about it. The fundamentals are obscured as a matter of course: If you had to buy a substantial amount of wheat, would you broadcast the fact before you made the purchase? No, we will not know the fundamental changes in the market until too late, and even if we did, the supply/demand equation is so complicated that we could not compute the effects of the changes. It is the innate complication of the supply/demand function that throws even the world-class economists off the track in predicting something as apparently straightforward as interest rates (as we saw in Table 1-3).

Solving the Supply/Demand Equation

While we cannot compute the effects of changed fundamentals, the market does the job for us. Each day's trading is a solution of the supply, demand equation. The results are not elegant; just so much traded at such and such a price. Price and volume at price show supply/demand balance. If there is no balance at a particular price, price moves and volume tells whether balance is achieved. Price without much volume is probably not at value. Price over time accompanied by volume defines value in balanced markets. As long as the market remains in balance, previous prices and their volumes remain valid indicators of demand.

Consequently, balanced trading-range markets offer the possibility of detecting value. In a trading-range market, i.e., a bracket, price rotates over time to accommodate all market participants. Price rises as long as there are buyers, reaching a price so high that no one will pay more. Volume goes to zero beyond the high, and it goes to zero beyond the low. On a daily basis, the trading range is much smaller. Trading volumes and prices respond to the stimuli of the day: demand, news, rumors, etc. Each day is a building block for the longer-term market. By collecting the information for all the days in a particular market condition, one gets a summation, the accumulation of all demand, news, and rumor.

This collection is the cumulative vote of the market. To get the collection, simply add up all the volumes for each price and plot price against volume: peak volume locates peak demand, which locates value. On a daily basis, this is just the Market Profile. Over longer times, it is the Overlay Demand Curve.

Figure 4-6A. Five days of profiles of March 1993 T-bonds, December 8–14, 1992, with value areas posted

CHICAGO BOARD OF TRADE		MARKET PROFILE* GRAPHIC			
The CISC0 five day Market Profile* display					
T-BOND (CBOT) DAY	MAR 93	First date: 12	8 92	Last date: 12	14 92
8	9	10	11	14	
10412		\$			
10411		\$FG	Z		
10410		\$FGH	Z\$		
10409	K	\$EFGHLM <vu	Z\$		
10408	JKL	\$BCDEFGHLM	\$B		
10407 LM	HIJKL	\$ABCDEHL	\$BC		
10406 LM	HIJKLM	\$ABCDHIL	\$ABC		
10405 LM	GHIJLM	\$ABCHIL	\$ABCDH <vu		
10404 L	GHIJL <vu	\$ABIKL	\$ABCDFGHJKLM Z		
10403 IJL	EGH	Z\$AIKL	\$ABCDGHIJKLMZ		
10402 \$IJKL <vu	DEFGH	Z\$AIJKL	\$ABCDGHIJL Z\$D		
10401 Z\$IJKL	ZCDEFG	Z\$IJK <v1	\$ABCDGHI Z\$DEGIJ		
10400 Z\$IJKL	ZCDEF	Z\$IJK	ABCEFG <v1	\$DEFGHIJ <vu	
10331 Z\$CDHIJK	ZBC	Z\$IJK	ABDEFG	\$BCDEFGHIJ	
10330 Z\$ABCDEFghi	Z\$ABC	\$IJK	E	\$ABCDEFGHIJL	
10329 ABCDEFghi	Z\$ABC	\$JK	E	\$ABCEJL	
10328 ABCDEFGH	Z\$AB	\$JK		\$ABJKLM <v1	
10327 ABEFH <v1	\$AB			ABJKLM	
10326 ABE	\$AB <v1			ABK	
10325 AB	B				
10324	B				

These profiles are from the cleared LDB Report.

The first Overlay program was developed by CISC0 in 1986 for five days of data. Figure 4-6A contains the raw data for a five-day Overlay, the profiles. Traders used to line up a series of profiles along a wall and sight down them to get a feel for market condition, to integrate the market behavior over several days.

The five-day Overlay in Figure 4-6B is a linear count of the TPOs at each price for the profiles of Figure 4-6A. Each day's contribution is identified by the numbers 1 (latest day), 2, 3, 4, and 5.

In a well-behaved, balanced market, as in Figure 4-6B, the Overlay shows little volume at the top prices, little volume at the bottom prices, and a lot of volume in the middle, producing the bell-shaped curve.

Figure 4-6B. Five-day Overlay Demand Curve for data of Figure 4-6A**Five Day Overlay Demand Curve.****** ALL TDG PERIODS INCLUDED FOR VOLUME CONSISTENCY ****

	VOL	HITS	1=NEAR, 2=NEXT BK,...
10412	15910	1	3
10411	135350	4	2333
10410	404950	6	223333
10409	377740	10	2233333334
10408	552190	15	22333333333444
10407	736970	18	222333333334444455
10406	1097040	20	22223333333344444455
10405	1069040	21	222222333333344444455
10404	1067760	25	12222222222223333334444455
10403	1120570	27	1222222222222233333334444555
10402	1266730	32	11122222222222233333334444455555
10401	1480020	34	11111112222222222333334444444555555
10400	1402780	31	11111111222222222333334444444555555
10331	929400	32	111111111122222223333344444445555555
10330	850170	33	1111111111112333344444455555555555
10329	949340	27	1111111111233344444445555555555
10328	977930	22	111111113334444445555555555
10327	734750	14	1111114444455555
10326	395730	9	1114444555
10325	73460	3	455
10324	7880	1	4

Column 1 is the price, column 2 is cleared volume at each price, HITS is a TPO count for each price and the Overlay is last (1 = trading on December 14, 2, 3, 4, and 5 are for December 11, 10, 9, and 8 respectively).

Structure, Condition, and Value

The Overlay Demand Curve is a graphic of demand. The shape of the curve, i.e., the quality of the distribution, gives the structure of the market. A single distribution with a well-formed bell is the structure of a single-valued market, one in which traders recognize a single value (range). If there are two or more bells somewhat superposed and overlapping, the structure is that of a multivalued market. If the bell or bells are poorly formed, the market structure is telling you that the marketplace does not understand value very well.

Market condition also is found from the Overlay distribution. A single bell-shaped distribution indicates a balanced, trading-range market.

Multiple bells show, first of all, an unbalanced market. That might mean the market is currently trending, or it could just be moving into a bracketing mode, or it could be very volatile. If a transition from trending to bracketing or bracketing to trending is under way, the trader will know from tracking previous days' behavior. Volatile markets result from rapid and arbitrary changes of value, as when central banks intervene in a currency. These situations, too, are easily recognized within the context of the past market activity.

Value is well defined in a single distribution Overlay. The center of value lies at the peak of the volume distribution. A value region extends on either side of the peak, similar to the value area of the one-day Market Profile. Comparing the Overlay Demand Curve to the standard "normal," or gaussian distribution, one can estimate that two-thirds of the trading will occur within one standard deviation of the center line. Overlays are built from observations; they come from experimental data and one does not know exactly what the "normal" distribution parameters are. The general concept is of use to the trader; value is located around the greatest volume of trading and prices farther out, toward the upper and lower price limits, are away from value.

In trending markets with multiple distributions, value and price play a push-pull game. Normally, value changes and price breaks out of the single distribution to chase value. Alternatively, price will move on rumor, and if the rumor is confirmed, price will lead value. In this process, price often overshoots value and there is a pullback, forming a small region of high volume. Then, if value is still evolving, there is another series where value moves, price follows and overshoots, and then price comes back more or less to value. The result is a market structure showing a series of minidistributions at higher and higher or lower and lower prices. The Overlay graphic becomes a series of run-pause pairs.

Ultimately, of course, final value is reached and the market stabilizes back into a single distribution. If breakout came from an unconfirmed rumor, value has not changed. Then run-pause becomes run-return, a one-step process; price just comes back into the bracket.

Lag and Price Fluctuation

Lag is bad for the trader because it delays understanding of the current market. But streaming price data from a ticker, where there is no delay, is equally bad for the trader, since the frequent fluctuation in prices makes it hard to detect real effects. Half-hour time frames for TPOs provide the essentials, the price range and a single count (TPO) at each price. This integrates out the excess data from ticker fluctuations while maintaining

a record of each price traded. With a bracketing market condition, the Overlay incorporates homogeneous data and there is no lag, even though the Overlay contains many days of data. Consequently, Overlay Demand Curves have few lag or fluctuation effects.

Time Lengths of Overlay Demand Curves

The time lengths of Overlays should be set to include only homogeneous data. That is, if a market has been in a bracket 17 days, the Overlay could be up to 17 days long without distortions from the previous trend. An Overlay of maximum length would theoretically start its bracket at the moment the previous trend ceases. As a practical matter, several days must pass before we can be sure a market has stopped trending and started bracketing. The reason lies in the run-pause form of trends. The pauses are typically several days in duration. Pauses may ultimately turn into brackets, or they may terminate with another price run.

A reasonable minimum Overlay to develop a recognizable bracket is five days for markets that come into balance quickly (T-bonds), longer for others like the grains. Maximum bracket lengths can be several months. Practically, one trading month is generally long enough to capture the current market trading range.

Universal Elements

Research on the Overlay Demand Curve reveals certain conditions that appear to be present, at one time or another, in all markets. Markets can be bracketing, trending, or volatile. It is possible to have a combination of conditions in the same market. For instance, within a 20-day bracket there may be an internal 5-day trend. Or within a trending market there may be a short-term bracket (recognized as a pause). Or a trending market can become so volatile that the trend can no longer be identified.

Brackets

Bracketing markets display a more or less well-defined bell-shaped price-volume distribution. There is heavy trading around the middle prices with decreasing activity toward the upper and lower price limits. Figure 4-7 is a good example of a bracketing market condition.

Price activity in a bracket tends to rotate from high to low and low to high. The middle price has the highest expectation, which is another way of saying it is the most popular price. Prices at the limits are more rarely traded. In Figure 4-7 there is good rotation. (ROT PROFILE days: 3, Oct. 3, is down; 4, Oct. 4, is down; 5, Oct. 5, is up; and 6, Oct. 8, is down.)

Figure 4-7. Five-day TPO Overlay with rotation profile for December 1990 T-bonds, October 2–8, 1990, showing a high degree of symmetry (structure), single distribution (condition = bracket), and high value point at 9014

TPO OVERLAY AND PRICE ROTATION PROFILE
 DEC 90 T-BOND (CBOT) DAY 10 02 90 TO 10 08 90
 5 DAY OVERLAY

PRICE	DYS	L/F	ROT	PROFILE *	TPOS	TPO VOL	OVERLAY *
9102	1			5	1	X	
9100	1			5	2	XX	
9030	1			5	6	XXXXXX	
9028	2	6	56		6	XXXXXX	
9026	2	6	56		9	XXXXXXXX	
9024	3	26	256		11	XXXXXXXXXX	
9022	4	26	2456		18	XXXXXXXXXXXXXXXXXX	
9020	5	26	23456		21	XXXXXXXXXXXXXXXXXXXX	
9018	5	26	23456		30	XXXXXXXXXXXXXXXXXXXXXXXXXX	
9016	5	26	23456		30	XXXXXXXXXXXXXXXXXXXXXXXXXX	
9014	5	26	23456		31	XXXXXXXXXXXXXXXXXXXXXXXXXX	
9012	5	26	23456		24	XXXXXXXXXXXXXXXXXXXXXX	
9010	4	2	2345		20	XXXXXXXXXXXXXXXXXXXX	
9008	3		345		12	XXXXXXXXXXXX	
9006	3		345		9	XXXXXXXXXX	
9004	2		34		6	XXXXXX	
9002	1		3		2	XX	

Brackets are extended by “false breakouts” beyond the bracket limits, with price rapidly returning to the confines of the bracket. When a rumor or other cause drives prices out of a bracket and value has not changed commensurately, it is often the commercials who counter the move, driving price back into the confines of the bracket. Examples of commercial capping are found in Figures 2-4 and 2-6. An upside breakout and return to bracket the next day in the June 1991 S&P market is in Figures 4-8A and 4-8B.

The main effect of the false breakout is to widen the bracket range. The new bracket upper limit of 37940 is considerably above the previous day’s upper limit of 37820. (For illustration, the Overlays are posted in 20-point divisions; a trader would be more exact.) Applying the techniques of Chapter 2, the commercials’ activity is shown in Table 4-2.

The capping by the commercials on two consecutive days set a well-defined resistance in the neighborhood of 37970. On the next trading day, May 28, the trader is alerted if price rises into the 37950 region. If the commercials sell strongly again, it will be apparent from the price action.

Figure 4-8A. Three-day TPO Overlay with rotation profile for June 1991 S&P, May 23, 1991

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TPO OVERLAY AND PRICE ROTATION PROFILE
05 17 91 TO 05 23 91    JUN 91 S&P 500 (CME-IOM)
Day 8 in ROT PROFILE is Thursday, May 23, 1991

PRICE DYS  L/F ROT PROFILE *  TPOS TPO VOL OVERLAY *
37940  1    8    8              1 X
37920  1    8    8              1 X
37900  1    8    8              1 X
37880  1    8    8              3 XXX
37860  1    8    8              3 XXX
37840  1    8    8              2 XX
37820  1    8    8              3 XXX <== Upper limit
37800  2    8    68             5 XXXXX
37780  3    8    678            7 XXXXXXX
37760  3    8    678           11 XXXXXXXXXXX
37740  3    8    678           12 XXXXXXXXXXX
37720  3    8    678           16 XXXXXXXXXXXXXXXX
37700  3    8    678           17 XXXXXXXXXXXXXXXX
37680  3    8    678           15 XXXXXXXXXXXXXXXX
37660  3    8    678           18 XXXXXXXXXXXXXXXX
37640  3    8    678           18 XXXXXXXXXXXXXXXX
37620  3    8    678           17 XXXXXXXXXXXXXXXX
37600  3    8    678           19 XXXXXXXXXXXXXXXX
37580  3    8    678           16 XXXXXXXXXXXXXXXX

```

Day 8 in the ROT PROFILE is Thursday, May 23. The market is bracketing, with its upper limit at 37820. The graphic below 37580 is deleted.

Should price reach 37970 or above and there is no strong rejection, the resistance has been penetrated and a breakout may be underway. The expected result is for price rejection to maintain the bracket. A less probable event with highly important implications for the trader is a breakout and even higher prices.

Trends

Trending markets most frequently start as a breakout from a bracket, more rarely as a trend reversal. Figure 4-8B shows the June 1991 S&P for May 24 in a bracket that has seen two consecutive false breakouts. Often, false breakouts precede the real thing, as was the case for the next trading day, May 28, shown in Figure 4-9.

Figure 4-8B. Four-day TPO Overlay with rotation profile for June 1991 S&P, May 24, 1991

Day 9 in ROT PROFILE is Friday, May 24, 1991

PRICE	DYS	L/F	ROT PROFILE *	TPOS	TPO VOL OVERLAY *
37960	1	9	9	1	X
37940	2	9	89	4	XXXX <== Bracket upper limit
37920	2	9	89	5	XXXXX
37900	2	9	89	10	XXXXXXXXXX
37880	2	9	89	11	XXXXXXXXXX
37860	2	9	89	8	XXXXXXXX
37840	2	9	89	5	XXXXX
37820	2	9	89	4	XXXX
37800	3	9	689	6	XXXXX
37780	4	9	6789	8	XXXXXXXX
37760	4	9	6789	12	XXXXXXXXXXXX
37740	4	9	6789	15	XXXXXXXXXXXXXXXX <== Close
37720	4	9	6789	20	XXXXXXXXXXXXXXXXXXXX <== Open
37700	4	9	6789	21	XXXXXXXXXXXXXXXXXXXX
37680	4	9	6789	18	XXXXXXXXXXXXXXXXXXXX
37660	4	9	6789	20	XXXXXXXXXXXXXXXXXXXX
37640	4	9	6789	19	XXXXXXXXXXXXXXXXXXXX
37620	4	9	6789	18	XXXXXXXXXXXXXXXXXXXX
37600	3		678	19	XXXXXXXXXXXXXXXXXXXX
37580	3		678	16	XXXXXXXXXXXXXXXXXXXX

The bracket of May 23 is extended by a false breakout. Open on the 24th is 37720, well within the former five-day bracket. Price broke out above the previous day's upper bracket limit at 37820, went as high as 37970, returning to close at 37740, well within the bracket.

Table 4-2. Commercial volume activity for June 91 S&P

CTI 2 STUDY FOR: SP 06 91

Commercial Activity Review (10 days max.). Significant action is:

VOL/PRICE TIC: Values of 70 or more.

VALUE AREA: Fifty percent greater than the average.

QUADRANT: Fifty percent greater than the average.

05 24 Upper Comm Action: 37970	VOL/PRICE	VALUE AREA	
05 23 Upper Comm Action: 37940	VOL/PRICE	VALUE AREA	
Lower Comm Action: 37400			QUADRANT
05 21 Lower Comm Action: 37340		VALUE AREA	
05 17 Upper Comm Action: 37460	VOL/PRICE	VALUE AREA	
05 16 Lower Comm Action: 37065		VALUE AREA	
05 15 Lower Comm Action: 36650		VALUE AREA	
05 14 Lower Comm Action: 37120			QUADRANT

There was both VOL/PRICE and VALUE AREA upper capping at 37970 on May 24. The same is true for May 23 at a slightly lower price (37840).

Figure 4-9. Three-day TPO Overlay with rotation profile for June 1991 S&P, May 28, 1991, showing breakout on Tuesday, May 28, from market of May 24 in Figure 4-8B

TPO OVERLAY AND PRICE ROTATION PROFILE
 JUN 91 S&P 500 (CME-IOM) 05 20 91 TO 05 28 91
 Day 9 in ROT PROFILE is Tuesday, May 28, 1991

PRICE	DYS	L/F	ROT PROFILE *	TPOS	TPO VOL	OVERLAY *
38360	1	9	9	1	X	
38340	1	9	9	2	XX	
38320	1	9	9	2	XX	
38300	1	9	9	2	XX	
38280	1	9	9	3	XXX	
38260	1	9	9	2	XX	
38240	1	9	9	1	X	
38220	1	9	9	1	X	<== Close
38200	1	9	9	1	X	
38180	1	9	9	1	X	
38160	1	9	9	2	XX	
38140	1	9	9	3	XXX	
38120	1	9	9	3	XXX	
38100	1	9	9	2	XX	
38080	1	9	9	1	X	
38060	1	9	9	1	X	
38040	1	9	9	1	X	
38020	1	9	9	2	XX	
38000	1	9	9	2	XX	
37980	1	9	9	3	XXX	<== Upside breakout
37960	2	9	89	5	XXXXX	
37940	3	9	789	8	XXXXXXXX	
37920	3	9	789	10	XXXXXXXXXX	
37900	3	9	789	15	XXXXXXXXXXXXXXXX	<== Open
37880	3	9	789	17	XXXXXXXXXXXXXXXX	
37860	3	9	789	13	XXXXXXXXXXXX	
37840	3	9	789	10	XXXXXXXXXX	

Possible nodes formed at 38140 and 38260. Close at 38220 is below the second node, but above the first.

Another breakout example starts from the well-defined T-bond bracket we saw in Figure 4-7. On October 8, 1990, the lower bracket limit is 9004. The downside breakout came the next day, with details in Figure 4-10. Again, expected market activity is rotation within the bracket, but at any price below 9004 (or above 9030) the trader is alerted to unexpected market action, i.e., a breakout.

Figure 4-10. Five-day TPO Overlay with rotation profile for December 1990 T-bonds, October 9, 1990, showing downside breakout from market of October 8 in Figure 4-7

```

      TPO OVERLAY AND PRICE ROTATION PROFILE
DEC 90 T-BOND (CBOT) DAY      10 03 90 TO 10 09 90

PRICE DYS  L/F ROT PROFILE *  TPOS TPO VOL OVERLAY *
9102 1      5              1 X
9100 1      5              2 XX
9030 1      5              6 XXXXX
9028 2     56              6 XXXXX
9026 2     56              9 XXXXXXXX
9024 2     56              8 XXXXXXXX
9022 3     456             11 XXXXXXXXXX
9020 4  3    3456          11 XXXXXXXXXX
9018 4  3    3456          18 XXXXXXXXXXXXXXXXXXXX
9016 4  3    3456          18 XXXXXXXXXXXXXXXXXXXX
9014 5  3    34567         21 XXXXXXXXXXXXXXXXXXXX
9012 5  3    34567         17 XXXXXXXXXXXXXXXXXXXX <== Open 10/09
9010 4  3    3457          19 XXXXXXXXXXXXXXXXXXXX
9008 4  3    3457          12 XXXXXXXXXXXX
9006 4  3    3457          9 XXXXXXXX
9004 4  3    347           6 XXXXX <== Previous day lower limit
9002 2  3    37           2 XX <== Breakout 10/09
9000 1  7    7            1 X
8930 1  7    7            1 X
8928 1  7    7            4 XXXX
8926 1  7    7            5 XXXXX
8924 1  7    7            5 XXXXX
8922 1  7    7            5 XXXXX
8920 1  7    7            4 XXXX
8918 1  7    7            5 XXXXX Node 1
8916 1  7    7            3 XXX
8914 1  7    7            4 XXXX
8912 1  7    7            5 XXXXX
8910 1  7    7            3 XXX
8908 1  7    7            1 X
8906 1  7    7            2 XX <== Close 10/09
8904 1  7    7            2 XX

```

A node developed between 8928 and 8910.

As the trend develops, the Overlay graphic shows the characteristic run-pause pattern. Price and value are not in balance, and price moves

seeking value. The first pause in the June 1991 S&P started at 38850 after the run from breakout up through 38800, as we see in Figure 4-11.

Trends are orderly. Their pattern is: First a breakout, then a price run, a pause as price and value come into balance, another run, another pause, etc., until the trend has run its course. The pauses result in small, nodular distributions (nodes). Figures 4-12 and 4-13 display the pattern.

The end of a trend is often signaled by price regression from the latest node back into the prior one, as a price overshoot comes back to value. Less often, price will be at value when the trend dies, and the last node becomes the source of the new bracket. A trend that aborts within a day or so of the breakout is characterized by a close back within the original bracket.

Trends that have several nodes often show exhaustion. The nodes tend to get smaller and smaller. Occasionally, markets are seen to "reverse on a dime," to go from trend to bracket to trending the other direction. Even rarer are markets that go from trending one way to trending the other, as shown in Figure 4-14.

Figure 4-11. TPO Overlay with rotation profile for June 1991 S&P, showing breakout on 4/16 and node formation

```

TPO OVERLAY AND PRICE ROTATION PROFILE
JUN 91 S&P 500 (CME-IOM)    03 18 91 TO 04 16 91

PRICE DYS L/F ROT PROFILE * TPOS TPO VOL OVERLAY *
38950 1 5 5 2 XX <== Node
38900 1 5 5 2 XX <== Close 4/16
38850 1 5 5 2 XX
38800 1 5 5 1 X
38750 1 5 5 1 X
38650 1 5 5 2 XX
38600 1 5 5 3 XXX
38550 1 5 5 4 XXXX
38500 2 5 W5 4 XXXX <== Upside breakout
38450 3 5 W45 6 XXXXX
38400 5 5 VWX45 14 XXXXXXXXXXXXXXXX
38350 6 5 VWX345 28 XXXXXXXXXXXXXXXXXXXXXXXXXXXX
38300 6 5 VWX345 31 XXXXXXXXXXXXXXXXXXXXXXXXXXXX
38250 7 5 UVWX345 36 XXXXXXXXXXXXXXXXXXXXXXXXXXXX
38200 7 5 UVWX345 28 XXXXXXXXXXXXXXXXXXXXXXXXXXXX
38150 10 5 RUVWXZ2345 31 XXXXXXXXXXXXXXXXXXXXXXXXXXXX
38100 11 5 RUVWXYZ2345 30 XXXXXXXXXXXXXXXXXXXXXXXXXXXX

```

On April 19, the market opened on a gap down at 38900. This price is below both node 1 and node 2. Trading within or below a prior node (within or above if a downtrend) normally signals the end of a trend. This market continued down, closing at 38635. The next trading day a close of 38330 put price back within the original bracket. This bracket-trend-bracket marked the Dow Jones first excursion above 3000. By the close on April 22, the Dow had fallen back below 3000.

Volatile Markets

Markets often become volatile at the end of a trend when price and value are mismatched. Their volatility results from a lack of consensus on value. Price can be bounded by an apparent bracket when in fact the market is quite volatile.

Excessively volatile markets are recognized on the Overlay Demand Curve graphic as a region, or regions, of poor distribution. A "ragged" appearing curve will lack the form of either a bell-shaped bracket or a trend. Volatile markets normally display poor distribution in all time frames. In Figures 4-15A, 4-15B, and 4-15C, the five-day Overlays for the deutschmark are shown for time frames of 20, 10, and 5 days, respectively.

Development of a Market: From Bracket to Trend to Bracket

Up to this point, many isolated cases of market activity have been covered. Now we examine a continuous series of market conditions, from emerging bracket to bracket, to breakout, to downtrend, to bracket, to uptrend, to trend end, to bracket in Figures 4-16 to 4-23. The vehicle is a series of five-day brackets in the March 1993 T-bond. Time covered is one trading month, from November 17 through December 14, 1992. Starting point is the five-day Overlay of an emerging bracket covering November 11–17 in Figure 4-16.

Figure 4-12. TPO Overlay with rotation profile for December 1990 T-bonds, showing node structure and downside breakout on October 9

```

TPO OVERLAY AND PRICE ROTATION PROFILE
10 02 90 TO 10 11 90      DEC 90 T-BOND (CBOT) DAY

PRICE DYS  L/F ROT PROFILE *  TPDS TPO VOL OVERLAY *
9102 1      5                1 X
9100 1      5                2 XX
9030 1      5                6 XXXXXX
9028 2      56               6 XXXXXX
9026 2      56               9 XXXXXXXXX
9024 3  2    256             11 XXXXXXXXXX
9022 4  2    2456            18 XXXXXXXXXXXXXXXXXXXX
9020 5  2    23456           21 XXXXXXXXXXXXXXXXXXXX
9018 5  2    23456           30 XXXXXXXXXXXXXXXXXXXX
9016 5  2    23456           30 XXXXXXXXXXXXXXXXXXXX
9014 5  2    23456           31 XXXXXXXXXXXXXXXXXXXX
9012 5  2    23456           24 XXXXXXXXXXXXXXXXXXXX
9010 4  2    2345           20 XXXXXXXXXXXXXXXXXXXX
9008 3      345             12 XXXXXXXXXX
9006 3      345             9 XXXXXXXXX
9004 2      34              6 XXXXXX
9002 1      3              2 XX  <== Breakout 10/09
9000 1      7              1 X
8930 1      7              1 X
8928 1      7              4 XXXX
8926 1      7              5 XXXXX
8924 1      7              5 XXXXX
8922 1      7              5 XXXXX  Node 1
8920 1      7              4 XXXX
8918 1      7              5 XXXXX
8916 1      7              3 XXX
8914 1      7              4 XXXX
8912 1      7              5 XXXXX
8910 1      7              3 XXX
8908 1      7              1 X
8906 1      7              2 XX  <== Close 10/09
8904 1      7              2 XX
8902 1      8              1 X
8900 2  9    89             5 XXXXX
8830 2  9    89             9 XXXXXXXXX
8828 2  9    89            15 XXXXXXXXXXXXXXXX  Node 2
8826 2  9    89            20 XXXXXXXXXXXXXXXXXXXX
8824 2  9    89            17 XXXXXXXXXXXXXXXXXXXX <== Close 10/10
8822 2  9    89            11 XXXXXXXXXX
8820 2  9    89             6 XXXXXX
8818 2  9    89             5 XXXXX
8816 2  9    89             2 XX

```


8814	1	9	9	1 X	
8812	1	9	9	3 XXX	
8810	1	9	9	3 XXX	Node 3
8808	1	9	9	4 XXXX	<= Close 10/11
8806	1	9	9	2 XX	

Figure 4-13. TPO Overlay with rotation profile for June 1991 S&P, showing formation of a second node

TPO OVERLAY AND PRICE ROTATION PROFILE
 JUN 91 S&P 500 (CME-IOM) 03 18 91 TO 04 17 91

PRICE	DYS	L/F	ROT	PROFILE #	TPOS	TPO VOL	OVERLAY #
39350	1	6	6		1 X		
39300	1	6	6		3 XXX		
39250	1	6	6		5 XXXXX	<= Close 4/17	
39200	1	6	6		7 XXXXXXX	<= Node 2	
39150	1	6	6		4 XXXX		
39100	1	6	6		4 XXXX		
39050	1	6	6		3 XXX		
39000	1	6	6		3 XXX		
38950	2	6	56		5 XXXXX	<= Node 1	
38900	2	6	56		4 XXXX		
38850	1		5		2 XX		
38800	1		5		1 X		
38750	1		5		1 X		
38650	1		5		2 XX		
38600	1		5		3 XXX		
38550	1		5		4 XXXX		
38500	2		W5		4 XXXX		
38450	3		W45		6 XXXXXX		
38400	5		VWX45		14 XXXXXXXXXXXXX		
38350	6		VWX345		28 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX		
38300	6		VWX345		31 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX		
38250	7		UVWX345		36 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX		
38200	7		UVWX345		28 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX		
38150	10		RUVWXZ2345		31 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX		
38100	11		RUVWXYZ2345		30 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX		

Figure 4-14. TPO Overlay with rotation profile for June 1991 S&P, March 18–April 19, 1991

TPO OVERLAY AND PRICE ROTATION PROFILE
 JUN 91 S&P 500 (CME-IOM) 03 18 91 TO 04 19 91

PRICE	DYS	L/F	ROT	PROFILE *	TPOS	TPO VOL	OVERLAY *
39350	1		6		1	X	
39300	2		67		5	XXXXX	
39250	2		67		9	XXXXXXXXX	
39200	2		67		16	XXXXXXXXXXXXXXXXX	<== Node 2 4/17
39150	2		67		12	XXXXXXXXXXXXX	
39100	2		67		11	XXXXXXXXXXXXX	
39050	2		67		8	XXXXXXX	
39000	2		67		4	XXXX	
38950	3		567		6	XXXXXX	<== Node 1 4/16
38900	3	8	568		7	XXXXXXX	
38850	2	8	58		10	XXXXXXXXXX	<== Node 3 4/19
38800	2	8	58		8	XXXXXXXXXX	
38750	2	8	58		4	XXXX	
38700	1	8	8		1	X	
38650	2	8	58		4	XXXX	<== Close 38635
38600	2	8	58		7	XXXXXXX	
38550	2	8	58		5	XXXXX	
38500	2		W5		4	XXXX	<== Breakout 4/16
38450	3		W45		6	XXXXXX	
38400	5		VW145		14	XXXXXXXXXXXXX	
38350	6		VW1345		28	XXXXXXXXXXXXXXXXXXXXXXXXXXXXX	
38300	6		VW1345		31	XXXXXXXXXXXXXXXXXXXXXXXXXXXXX	
38250	7		UVW1345		36	XXXXXXXXXXXXXXXXXXXXXXXXXXXXX	
38200	7		UVW1345		28	XXXXXXXXXXXXXXXXXXXXXXXXXXXXX	
38150	10		RUVW12345		31	XXXXXXXXXXXXXXXXXXXXXXXXXXXXX	
38100	11		RUVW12345		30	XXXXXXXXXXXXXXXXXXXXXXXXXXXXX	

Figure 4-15A. Twenty-day TPO Overlay with rotation profile for March 1993 deutschemark, February 19, 1993, showing ill-defined value

TPO OVERLAY AND PRICE ROTATION PROFILE
MAR 93 D MARK (CME-IMM) 01 22 93 TO 02 19 93
20 DAY OVERLAY

PRICE	DYS	L/F	ROT	PROFILE *	TPOS	TPO VOL	OVERLAY *
6330	1			R	2	XX	
6320	2			QR	3	XXX	
6310	2			QR	11	XXXXXXXXXX	
6300	3			QRT	15	XXXXXXXXXXXX	
6290	3			QRT	10	XXXXXXXXXX	
6280	4			QRST	9	XXXXXXX	
6270	2			ST	19	XXXXXXXXXXXXXXXXXX	
6260	2			ST	13	XXXXXXXXXXXX	
6250	1	P	P		1	X	
6240	1	P	P		6	XXXX	
6230	1	P	P		4	XXXX	
6220	2	P	PU		3	XXX	
6210	2	P	PU		2	XX	
6200	2	P	PU		3	XXX	
6190	2	P	PU		3	XXX	
6180	2	P	PU		7	XXXXXX	
6170	2	P	PU		14	XXXXXXXXXXXX	
6160	2	P	PU		2	XX	
6130	1			7	6	XXXX	
6120	3			V78	13	XXXXXXXXXXXX	
6110	5	9	V6789		15	XXXXXXXXXXXX	
6100	4	9	V689		19	XXXXXXXXXXXXXXXXXX	
6090	5	9	VW689		18	XXXXXXXXXXXXXXXXXX	
6080	6	9	VWX689		14	XXXXXXXXXXXX	
6070	5		VWX68		17	XXXXXXXXXXXXXXXXXX	
6060	5		WX568		10	XXXXXXXXXX	
6050	6		WX3568		17	XXXXXXXXXXXXXXXXXX	
6040	5		WX358		14	XXXXXXXXXXXX	
6030	7		XZ12358		23	XXXXXXXXXXXXXXXXXXXX	
6020	8		XYZ12358		33	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	
6010	8		XYZ12345		38	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	
6000	6		YZ1345		31	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	
5990	5		YZ345		12	XXXXXXXXXXXX	
5980	2		YZ		2	XX	
5970	2		YZ		2	XX	
5960	1		Y		1	X	

In 20 days, there are five or six TPO peaks, accompanied by a ragged distribution.

Figure 4-15B. Ten-day TPO Overlay with rotation profile for March 1993 deutschemark, February 19, 1993, showing two or three peaks in distribution

TPO OVERLAY AND PRICE ROTATION PROFILE
 MAR 93 D MARK (CME-IMM) 02 05 93 TO 02 19 93
 10 DAY OVERLAY

PRICE	DYS	L/F	ROT	PROFILE *	TPOS	TPO VOL	OVERLAY *
6130	1			7	6	XXXXXX	
6120	2			78	11	XXXXXXXXXX	
6110	4	9		6789	14	XXXXXXXXXXXX	
6100	3	9		689	18	XXXXXXXXXXXXXXXXXX	
6090	3	9		689	15	XXXXXXXXXXXXXXXXXX	
6080	3	9		689	6	XXXXXX	
6070	2			68	3	XXX	
6060	3			568	4	XXXX	
6050	4			3568	8	XXXXXXX	
6040	3			358	6	XXXXXX	
6030	6	Z		Z12358	15	XXXXXXXXXXXXXXXXXX	
6020	6	Z		Z12358	26	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	
6010	6	Z		Z12345	26	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	
6000	5	Z		Z1345	26	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	
5990	4	Z		Z345	9	XXXXXXX	
5980	1	Z		Z	1	X	
5970	1	Z		Z	1	X	

Figure 4-15C. Five-day TPO Overlay with rotation profile for March 1993 deutschemark, February 19, 1993, showing two or three peaks in distribution

TPO OVERLAY AND PRICE ROTATION PROFILE
 MAR 93 D MARK (CME-IMM) 02 12 93 TO 02 19 93
 5 DAY OVERLAY

PRICE	DYS	L/F	ROT	PROFILE *	TPOS	TPO VOL	OVERLAY *
6130	1			7	6	XXXXXX	
6120	2			78	11	XXXXXXXXXX	
6110	4	9		6789	14	XXXXXXXXXXXX	
6100	3	9		689	18	XXXXXXXXXXXXXXXXXX	
6090	3	9		689	15	XXXXXXXXXXXXXXXXXX	
6080	3	9		689	6	XXXXXX	
6070	2			68	3	XXX	
6060	3	5		568	4	XXXX	
6050	3	5		568	7	XXXXXX	
6040	2	5		58	5	XXXXX	
6030	2	5		58	2	XX	
6020	2	5		58	2	XX	
6010	1	5		5	2	XX	
6000	1	5		5	3	XXX	
5990	1	5		5	4	XXXX	

Figure 4-16. Five-day TPO Overlay with rotation profile for March 1993 T-bonds, November 17, 1993, showing end of trend and new bracket taking shape

TPO OVERLAY AND PRICE ROTATION PROFILE					
MAR 93 T-BOND (CBOT) DAY 11 11 92 TO 11 17 92					
PRICE	DYS	L/F	ROT PROFILE *	TPOS	TPO VOL OVERLAY *
10222	1		M	1	X
10220	1		M	1	X
10218	2	0	MO	2	XX
10216	2	0	MO	7	XXXXXX
10214	2	0	MO	9	XXXXXXXX
10212	3	0	LMO	14	XXXXXXXXXXXXXX
10210	4	0	LMNO	13	XXXXXXXXXXXXXX
10208	4	0	LMNO	18	XXXXXXXXXXXXXXXXXX
10206	3		LMN	14	XXXXXXXXXXXXXX
10204	3		LMN	17	XXXXXXXXXXXXXXXXXX
10202	3		LMN	15	XXXXXXXXXXXXXXXXXX
10200	3		LMN	13	XXXXXXXXXXXXXX
10130	3		LMN	7	XXXXXX
10128	3		LMN	5	XXXXX
10126	2		LM	2	XX
10124	2		LM	3	XXX
10122	1		L	3	XXX
10120	1		L	3	XXX
10118	2	K	KL	5	XXXXX
10116	2	K	KL	7	XXXXXX
10114	2	K	KL	9	XXXXXXXX
10112	1		L	9	XXXXXXXX
10110	1		L	2	XX

The price region 10124 to 10110 is the residual of the initial bracket prior to breakout. From 10128 to 10216, a new bracket is taking shape. Odd 32nds are eliminated for display purposes.

By November 25, the day before Thanksgiving, a well-defined bracket has formed (Figure 4-17). Limits are 10226 and 10210, with peak value at 10222. As brackets go, this is not a large one: only \$500 between limits. This bracket is too small for most traders to day-trade. A breakout into a trend is the preferred option.

The market for Friday, November 27 (Figure 4-18), has a wide range, from 10228 to 10128. A downside breakout occurred at 10 A.M., and the market moved on down to close at 10130.

**Figure 4-17. Five-day TPO Overlay with rotation profile for March 1993
T-bonds, November 25, 1993, showing new bracket completely
formed between 10226 and 10210**

TPO OVERLAY AND PRICE ROTATION PROFILE

MAR 93 T-BOND (CBOT) DAY 11 19 92 TO 11 25 92

PRICE	DYS	L/F	ROT	PROFILE *	TPOS	TPO VOL	OVERLAY *
10300	1	Q	Q		1	X	
10230	2	QU	QU		2	XX	
10228	2	QU	QU		2	XX	
10226	3	QU	QTU		7	XXXXXXX	
10224	4	QU	QRTU		23	XXXXXXXXXXXXXXXXXXXXX	
10222	4	QU	QRTU		27	XXXXXXXXXXXXXXXXXXXXX	
10220	4	QU	QRTU		24	XXXXXXXXXXXXXXXXXXXXX	
10218	5	QU	QRSTU		18	XXXXXXXXXXXXXXXXXXXXX	
10216	5	QU	QRSTU		19	XXXXXXXXXXXXXXXXXXXXX	
10214	4	Q	QRST		18	XXXXXXXXXXXXXXXXXXXXX	
10212	4	Q	QRST		8	XXXXXXX	
10210	2		ST		5	XXXXX	
10208	1		T		2	XX	
10206	1		T		1	X	
10204	1		T		1	X	

**Figure 4-18. Five-day TPO Overlay with rotation profile for March 1993
T-bonds, November 27, 1993, showing beginning of new trend**

TPO OVERLAY AND PRICE ROTATION PROFILE

MAR 93 T-BOND (CBOT) DAY 11 20 92 TO 11 27 92

PRICE	DYS	L/F	ROT	PROFILE *	TPOS	TPO VOL	OVERLAY *
10230	1		U		1	X	
10228	2	V	UV		3	XXX	
10226	3	V	TUV		8	XXXXXXX	
10224	4	RV	RTUV		20	XXXXXXXXXXXXXXXXXXXXX	
10222	4	RV	RTUV		24	XXXXXXXXXXXXXXXXXXXXX	
10220	4	RV	RTUV		16	XXXXXXXXXXXXXXXXXXXXX	
10218	5	RV	RSTUV		11	XXXXXXXXXXXX	
10216	5	RV	RSTUV		16	XXXXXXXXXXXXXXXXXXXXX	
10214	4	RV	RSTV		19	XXXXXXXXXXXXXXXXXXXXX	
10212	4	RV	RSTV		9	XXXXXXX	
10210	3	V	STV		7	XXXXXXX	
10208	2	V	TV		4	XXX	<== Downside breakout
10206	2	V	TV		2	XX	
10204	2	V	TV		3	XXX	
10202	1	V	V		2	XX	
10200	1	V	V		2	XX	...
10130	1	V	V		2	XX	<== Close
10128	1	V	V		2	XX	

Figure 4-19. Five-day TPO Overlay with rotation profile for March 1993 T-bonds, November 30, 1993, showing new node formation with close within the node

TPO OVERLAY AND PRICE ROTATION PROFILE									
MAR 93 T-BOND (CBOT) DAY				11 23 92 TO 11 30 92					
PRICE	DYS	L/F	ROT	PROFILE *	TPOS	TPO	VOL	OVERLAY *	
10230	1			U	1	X			
10228	2			UV	3	XXX			
10226	3			TUV	8	XXXXXXXX			
10224	3			TUV	18	XXXXXXXXXXXXXXXXXXXX			
10222	3			TUV	18	XXXXXXXXXXXXXXXXXXXX			
10220	3			TUV	10	XXXXXXXXXX			
10218	4	S		STUV	8	XXXXXXXX			
10216	4	S		STUV	10	XXXXXXXXXX			
10214	3	S		STV	15	XXXXXXXXXXXXXXXXXXXX			
10212	3	S		STV	8	XXXXXXXX			
10210	3	S		STV	7	XXXXXX			
10208	2			TV	4	XXXX		<== Breakout	11/27
10206	2			TV	2	XX			
10204	2			TV	3	XXX			
10202	2	W		VW	3	XXX			
10200	2	W		VW	4	XXXX			
10130	2	W		VW	7	XXXXXX		<== Close	
10128	2	W		VW	10	XXXXXXXXXX		<== Node	
10126	1	W		W	7	XXXXXX			
10124	1	W		W	6	XXXXXX			
10122	1	W		W	4	XXXX			
10120	1	W		W	4	XXXX			
10118	1	W		W	1	X			

Trading on Monday, November 30 (Figure 4-19), showed a downtrend. Prices built a node around 10128, at the low end of the previous range. T-bonds traded as low as 10118 but closed back at 10130, the same as Friday.

Closes for 11/30, 12/1, and 12/2 were 10131, 10205, and 10206, respectively, coming back almost to the original bracket.

By Thursday, December 3 (Figure 4-20), localized trading had created a four-day bracket with limits of 10214 and 10120. Value was poorly defined. Again, the bracket is rather narrow for day trading, and the distribution is far from a symmetric bell shape. Breakout trend trading can be supported.

Figure 4-20. Five-day TPO Overlay with rotation profile for March 1993 T-bonds, December 3, 1993, showing stagnating trend and new bracket filling in

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TPO OVERLAY AND PRICE ROTATION PROFILE
MAR 93 T-BOND (CBOT) DAY    11 30 92 TO 12 03 92

PRICE DYS  L/F ROT PROFILE *  TPDS TPO VOL OVERLAY *
10214  1      Y                4 XXXX
10212  3      Z    XYZ        14 XXXXXXXXXXXXXXXX <== Close
10210  3      Z    XYZ        27 XXXXXXXXXXXXXXXXXXXXXXXX
10208  3      Z    XYZ        21 XXXXXXXXXXXXXXXXXXXXXXXX <== Breakout 11/27
10206  3      Z    XYZ        12 XXXXXXXXXXXXXXXX
10204  2      Z    XZ         9 XXXXXXXXXX
10202  3      WZ    WXZ        9 XXXXXXXXXX
10200  2      W     WX        10 XXXXXXXXXX
10130  2      W     WX         9 XXXXXXXXXX
10128  2      W     WX        10 XXXXXXXXXX <== Node
10126  2      W     WX         9 XXXXXXXXXX
10124  1      W     W         6 XXXXXX
10122  1      W     W         4 XXXX
10120  1      W     W         4 XXXX
10118  1      W     W         1 X

```

On Friday, December 4, the bracket of December 3 experienced an upside breakout (see Figure 4-21). This market opened near the lows of the day, around 10202, then broke out at 10216 around 7:50 A.M., staying above the breakout price the rest of the day. A node formed around 10222, and the close at the high of 10306 put the trend firmly in control.

Price strongly moved higher the next two days, and by December 8, the market developed three nodes (Figure 4-22). Node 1 was a short pause of 3.5 hours (7 TPOs) on the breakout day, December 4. The next day, December 7, node 2 appeared, again in a short 3.5 hours. The same day, node 3 began and was well developed by December 8.

The bracket in Figure 4-23 is formed around node 3 of December 8. Limits are 10411 and 10325, with value centered at 10401. Once again, the bracket is narrow, about \$500 total. And, once again, we await the breakout.

Figure 4-21. Five-day TPO Overlay with rotation profile for March 1993 T-bonds, December 4, 1993, showing upside breakout signaling start of a new trend

TPO OVERLAY AND PRICE ROTATION PROFILE									
MAR 93 T-BOND (CBOT) DAY 11 30 92 TO 12 04 92									
PRICE	DYS	L/F	ROT	PROFILE	*	TPOS	TPO	VOL	OVERLAY *
10306	1	1	1			1	X	<==	Close
10304	1	1	1			1	X		
10302	1	1	1			1	X		
10300	1	1	1			2	XX		
10290	1	1	1			2	XX		
10228	1	1	1			4	XXXX		
10226	1	1	1			5	XXXXX		
10224	1	1	1			5	XXXXX		
10222	1	1	1			7	XXXXXXX	<==	Node
10220	1	1	1			5	XXXXX		
10218	1	1	1			4	XXXX		
10216	1	1	1			3	XXX	<==	Upside breakout
10214	2	1	Y1			6	XXXXXX		
10212	4	1	XYZ1			16	XXXXXXXXXXXXXXXXXX		
10210	4	1	XYZ1			29	XXXXXXXXXXXXXXXXXXXXXXXXXXXX		
10208	4	1	XYZ1			23	XXXXXXXXXXXXXXXXXXXXXXXXXXXX		
10206	4	1	XYZ1			14	XXXXXXXXXXXXXXXXXX		
10204	3	1	XZ1			10	XXXXXXXXXX		
10202	4	W1	WXZ1			10	XXXXXXXXXX		
10200	2	W	WX			10	XXXXXXXXXX		
10130	2	W	WX			9	XXXXXXXXXX		
10128	2	W	WX			10	XXXXXXXXXX		
10126	2	W	WX			9	XXXXXXXXXX		
10124	1	W	W			6	XXXXXX		
10122	1	W	W			4	XXXX		
10120	1	W	W			4	XXXX		
10118	1	W	W			1	X		

Treasury bonds come into balance faster than other markets, probably because the participants are more closely attuned to value. From 11/17 through 12/14, the Overlay Demand Curve successfully tracked each change in market condition unambiguously. The trader's goal is to understand the current condition and know what market action will cause a change in condition. Note that there is no predicting, no forecasting. There is, however, the underlying knowledge of what is expected (maintenance of the current condition) and what is unexpected (change of condition). Knowledge of market structure, condition, and value is not a trading model, per se. It is a basis for rational market decisions.

**Figure 4-22. Five-day TPO Overlay with rotation profile for March 1993
T-bonds, December 8, 1993, showing runs and pauses**

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TPO OVERLAY AND PRICE ROTATION PROFILE
MAR 93 T-BOND (CBOT) DAY    12 02 92 TO 12 08 92

PRICE DYS  L/F ROT PROFILE *  TPOS TPO VOL OVERLAY *
10406 1    3    3              1 X
10404 2    3    23             2 XX
10402 2    3    23             8 XXXXXXXX
10400 2    3    23            10 XXXXXXXXXX
10330 2    3    23            13 XXXXXXXXXXXX <== Node 3
10328 2    3    23            11 XXXXXXXXXXXX
10326 2    3    23             5 XXXXX
10324 1          2             2 XX
10322 1          2             2 XX
10320 1          2             1 X
10318 1          2             6 XXXXX
10316 1          2             7 XXXXXX <== Node 2
10314 1          2             3 XXX
10312 1          2             1 X
10310 1          2             1 X
10308 1          2             1 X
10306 1          1             1 X
10304 1          1             1 X
10302 1          1             1 X
10300 1          1             2 XX
10230 1          1             2 XX
10228 1          1             4 XXXX
10226 1          1             5 XXXXX
10224 1          1             5 XXXXX
10222 1          1             7 XXXXXX <== Node 1
10220 1          1             5 XXXXX
10218 1          1             4 XXXX
10216 1          1             3 XXX <== Breakout 12/04
10214 2    Y    Y1             6 XXXXX
10212 3    Y    YZ1            14 XXXXXXXXXXXX
10210 3    Y    YZ1            25 XXXXXXXXXXXXXXXXXXXXXXXX
10208 3    Y    YZ1            18 XXXXXXXXXXXXXXXXXXXX
10206 3    Y    YZ1             8 XXXXXXXX
10204 2          Z1             4 XXXX
10202 2          Z1             2 XX

```

By December 8 this market had run to 10222 and paused; run to 10316 and paused; and ran to 10330 and again paused.

Figure 4-23. Five-day TPO Overlay with rotation profile for March 1993 T-bonds, December 14, 1993, showing new bracket complete

TPO OVERLAY AND PRICE ROTATION PROFILE				
MAR 93 T-BOND (CBOT) DAY 12 08 92 TO 12 14 92				
PRICE	DYS	L/F	ROT PROFILE *	TPOS TPO VOL OVERLAY *
10412	1		5	1 X
10411	2		56	4 XXXX
10410	3		456	6 XXXXXX
10409	3		456	9 XXXXXXXX
10408	3		456	13 XXXXXXXXXXXX
10407	4	3	3456	18 XXXXXXXXXXXXXXXX
10406	4	3	3456	20 XXXXXXXXXXXXXXXXXX
10405	4	3	3456	22 XXXXXXXXXXXXXXXXXX
10404	5	37	34567	25 XXXXXXXXXXXXXXXXXXXX
10403	5	37	34567	31 XXXXXXXXXXXXXXXXXXXX
10402	5	37	34567	31 XXXXXXXXXXXXXXXXXXXX
10401	5	37	34567	33 XXXXXXXXXXXXXXXXXXXX
10400	5	37	34567	29 XXXXXXXXXXXXXXXXXXXX
10331	5	37	34567	25 XXXXXXXXXXXXXXXXXXXX
10330	5	37	34567	28 XXXXXXXXXXXXXXXXXXXX
10329	5	37	34567	24 XXXXXXXXXXXXXXXXXXXX
10328	4	37	3457	22 XXXXXXXXXXXXXXXXXXXX
10327	3	37	347	14 XXXXXXXXXXXXXXXX
10326	3	37	347	10 XXXXXXXXXX
10325	2	3	34	3 XXX
10324	1		4	1 X

The scale has been changed from every other tick, as in Figures 4-16 through 4-22, to every tick.

Rotation Index/Quadrant of Close

Traders know that trading-range markets often support shorter-term internal trends. It is not unusual for a (hidden) trend to start deep within a bracket, gather steam, and finally break out of the bracket as a well-defined trend. The Rotation Index/Quadrant of Close technique for staying alert to possible internal trends is developed and discussed in detail in Jones and Young (1990).

The Rotation Index is calculated from a price-time matrix: price is divided into four quadrants and likewise the time from the opening bell to close is divided into four parts. Take a market that is open four hours and trades between 220 to 200 throughout the day. Let T1 be the first one-hour period, T2 be the second, and so on. Q1 is the highest quadrant,

220 to 215, Q2 is the next quadrant down, 215 to 210 and so on. Tabulating this day's activity with a 1 in each block in which trading occurred:

	T1	T2	T3	T4
Q1	1			
Q2		1		
Q3			1	
Q4				1

showing the downtrend. In case two, let the price in Q1 be 200, Q2 is 205, and so on, giving:

	T1	T2	T3	T4
Q1				1
Q2			1	
Q3		1		
Q4	1			

defining the uptrend. Now let price in period Q1 range from 200 to 220, in Q2 also range from 200 to 220 and so for the other two periods.

	T1	T2	T3	T4
Q1	1	1	1	1
Q2	1	1	1	1
Q3	1	1	1	1
Q4	1	1	1	1

This last case is a perfectly rotating market.

The raw index is found by summing the 1s for each case, giving 4, 4, and 16. But we would like to have an index that is zero for perfect trend and 1 for perfect rotation. We can get this by normalizing with the equation:

$$RI = (RRI - 4) / 12$$

where RRI is the raw rotation index from summing the 1s.

Experience has shown that a Rotation Index above 0.6 describes a market in rotation and below 0.6 indicates internal trending, with more trending the smaller RI becomes.

No direction is calculated for the RI. Quadrant of Close, however, does show directional preference; a close in the upper quadrant equaling "up," close in quadrant 4 is "down." Two Overlays are used, a four-day and an eight-day. That gives two Rotation Index measures and two close loca-

tions. The strongest alert to trend would then be agreement among all four measures; say both RIs below 0.6 and both QCs being 1 for upside alert, or 4 for downside preference.

The Bell Curve and Expected Behavior

Markets in a bracket, as in Figure 4-23, have distributions that closely approximate the bell-shaped normal, or gaussian, distribution. Even when not a perfect gaussian, we can use the characteristics of bell curves to guide our thinking about the market. Value area is one of the items; it is based on the standard deviation.

Two-thirds (67 percent) of the central area under a bell-shaped curve is within one standard deviation of the middle. The value area, for convenience of calculation, is defined as the central 70 percent of the bell. The next measure out is two standard deviations, which covers 95 percent of the curve. Statistically, events outside the plus or minus two standard deviation (2 SD) limits are considered improbable. Alternatively, trading outside the 2 SD limits would be evidence for a change of distribution, going from bracket to trend. As long as the bracket distribution holds, trading near the bottom or top will return to the middle, the value-area region.

The bell-shaped distribution gives us a way to organize our thinking about the market that forms the distribution. We can estimate the likelihood of price at a certain spot and understand what it means to us when the unlikely occurs. The bracket of Figure 4-23 goes from 10411 to 10325, its center is 10402, and it contains a total of 367 Xs. The value area (70 percent) is 257 Xs and extends from 10405 to 10329. (We started with the TPO count at 10402, the middle, and added the highest ones in order until we got to 257.) The 2 SD region contains 348 TPOs and is approximately 10409 to 10327. Prices above 10409 and below 10327 are unexpected, prices within the region 10405-10329 are highly probable.

A simpler way to break down the range is by octants, as is done in the Trader Control Package described in Chapter 5. A bracket range of 10411-10325 has 19 price tics. An octant is one-eighth, or approximately 2.5 price tics. So the one-octant points are 10409 and 10327 and the two-octant points are 10407 and 10329.

One approach to defining the market is to let the one-octant points be the "alert for breakout." Price above 10409 but at or below 10411 is in the alert region. A price move outside the bracket is the first signal of the potential beginning of a trend. If it is a "false breakout," price will return to the bracket. False breakouts are the way brackets widen. If no breakout occurs, the bracket condition is maintained. In that case, the expected

behavior is price rotation back into the center of the distribution. A schematic of this process, using the prices of Figure 4-23, is:

10411	Prices above 10411 are in the breakout region. 10411 to 10409 is the one-octant or "alert" region.
10409	A responsive short at 10408 has a target of the middle. 10411 to 10407 is the two-octant region.
10407	A responsive short at 10406 has a target of the middle.
10402	Center of distribution. The most probable price.
10329	A responsive long at 10328 has a target of the middle. 10329 to 10325 is the two-octant region.
10327	A responsive long at 10326 has a target of the middle. 10327 to 10325 is the one-octant or "alert" region.
10325	Prices below 10325 are in the breakout region.

The octant approach is much simpler to calculate than the standard deviation. It has another advantage: it is a simple way to set risk. The bond market of January 6, 1993, had a 20-day bracket of 64 tics, 10520 to 10321, with the middle between 10419 and 10420. Each octant is eight points. A responsive short at the first octant, 10513, with a target at the middle, 24 points away, and a stop at the breakout (10520), offers a reward-to-risk ratio of 3. A short at the second octant (10505) with a target at the middle and a stop-loss at 10520 has a reward-to-risk ratio of 1. By selecting trading points between 10513 and 10505, the trader can set the reward-to-risk at any level between 3 and 1. Waiting for a trade even nearer the breakout price offers even larger reward-to-risk ratios. Of course, the probability of getting a trade far out on the wings of the distribution gets smaller and smaller. There is a tradeoff: the higher the reward-to-risk ratio, the less likelihood of getting a trade.

Responsive trading is predicated upon the market staying in a bracket and having price rotate back toward the other end of the distribution. Markets do tend to maintain the same condition; so, the expected behavior is price rotation within bracket bounds. The unexpected, a change in the market's condition, occurs more rarely. That is why responsive trades normally have a stop-loss point. The advantage of the Overlay is that it defines both the expected and the unexpected regimes. Market condition crossover points are defined, and the trader is immediately alerted when one is met.

Manageable Overlays: 5-10-15- and 20-Day

Most of the examples of Overlay Demand Curves in this chapter have been one of the standard lengths, 5, 10, 15, or 20 days. This is not accidental. Although the Overlay Demand Curve maximum length is determined by the length of the market condition being analyzed (if a trend, from the first day the market started trending; if a bracket, the first day the trend terminated and the bracket began), the maximums are rarely needed. It is most useful for comparative purposes to have a set of consistent Overlay lengths.

We have noted that the shortest practical Overlay is about five days. Markets that have turned from trend to bracket take a few days to identify themselves. On the long end, older data tend to lose their significance. For instance, in a long-term bracketing market, normal price rotation will continuously move price throughout the trading range. After a certain amount of rotation, the distribution structure is built. Additional data from more days of rotation will be superfluous. The point of diminishing returns appears to be around 20 days. Twenty days of T-bond half-hour data is 300 TPO data points. In terms of a normal bell-shaped curve, the wings beyond two standard deviations (95 percent of the data) will have 15 points total, plenty to measure. With a maximum length of 20 days and a minimum of 5 days, it is logical to fill in the spaces with a 10-day and a 15-day Overlay for completeness. Thus, the 20-, 15-, 10-, and 5-day Overlays become the basic set. This set will do for the vast majority of analyses.

The advantage of a prearranged set of four Overlays for each market is that it immediately becomes possible to compare market to market. We find that most of the time, most markets are not offering any special trading opportunities. Low-risk trades arise in certain situations, as when price is away from value or price breaks out of a bracket.

Markets with the best potential for low-risk trades are those that are bracketing. The length of the bracket is a consideration. In some markets opportunity arises in short time frames, in others, in longer time frames. The starting point for a survey is a table of bracketing markets, sorted on the basis of bracket length (5, 10, 15 and 20 days). An example of a bracket screen is found in Table 4-3.

Day traders may be thought of as principally responsive types, wanting to find prices in the extreme upper or lower part of a bracket. They might start by using the bracket screen to sort out all those futures with \$RNG values greater than an arbitrary amount, say \$600. Anything less would not offer (this trader) an adequate potential for taking the trading

Table 4-3. Bracket Screen, as of close, February 19, 1993

Date Run 2 19 93 ** Non-US futures \$RNG not converted to \$.

rp = Ref Pt: If \$RNG is 800, OCT = \$100, QUAD = \$200, MID = \$400 from LIM.

DY	FUTUR	D	UP-LIM	LW-LIM	CLOSE	\$RNG =>rp	OCT	QUAD	MID	QUAD	OCT
5	C	3/93	S	2136	2116	2126	100	2134	2132	2126	2120
5	CC	3/93	S	6600	6290	6575	1162	6562	6523	6445	6328
5	CD	3/93	S	7966	7896	7932	700	7958	7949	7931	7904
5	CO	3/93	S	907	884	897	229	905	902	895	886
5	GC	4/93	L	3343	3294	3310	490	3337	3331	3318	3300
5	GI	3/93	L	9940	9840	9875	250	9928	9915	9890	9852
5	HO	3/93	L	5650	5420	5532	966	5622	5593	5535	5448
5	LC	4/93	S	7955	7860	7915	380	7944	7932	7907	7883
5	LH	4/93	S	4495	4450	4475	135	4490	4484	4472	4461
5	O	3/93	L	1406	1376	1382	150	1403	1400	1392	1384
5	OJ	3/93	S	7100	6775	6995	487	7060	7019	6937	6856
5	PB	3/93	S	3800	3675	3750	475	3785	3769	3737	3706
5	SM	3/93	L	1780	1767	1769	130	1779	1777	1773	1770
5	SP	3/93	S	43850	43150	43510	3500	43763	43675	43500	43325
5	SU	3/93	L	940	888	900	582	934	927	914	894
5	TB	3/93	L	9712	9704	9705	200	9711	9710	9708	9706
5	TX	3/93	L	9475	9340	9396	675	9459	9442	9407	9373
5	W	5/93	L	3436	3364	3366	362	3427	3420	3401	3382
10	BO	3/93	S	2098	2034	2080	384	2090	2082	2066	2042
10	BP	3/93	S	14560	14140	14510	2625	14508	14455	14350	14245
10	C	3/93	S	2140	2112	2126	137	2136	2133	2125	2117
10	CO	3/93	S	907	869	897	379	903	898	888	878
10	GC	4/93	L	3344	3286	3310	580	3337	3330	3315	3300
10	HO	3/93	L	5740	5420	5532	1344	5700	5660	5580	5460
10	LC	4/93	S	7970	7820	7915	600	7952	7933	7895	7857
10	NY	5/93	S	6410	6090	6370	1600	6370	6330	6250	6170
10	O	3/93	L	1432	1370	1382	312	1424	1416	1401	1384
10	OJ	3/93	S	7100	6600	6995	750	7038	6975	6850	6725
10	QL	4/93	S	5970	5600	5791	1554	5924	5878	5785	5692
10	S	3/93	S	5744	5626	5732	587	5731	5715	5685	5655
10	SM	5/93	L	1798	1778	1784	200	1796	1793	1788	1783
10	TB	3/93	L	9712	9703	9705	225	9711	9710	9707	9705
10	TX	3/93	L	9530	9340	9396	950	9507	9483	9435	9387
10	W	3/93	S	3706	3574	3666	662	3691	3674	3641	3606
15	BO	3/93	S	2098	2050	2080	288	2092	2086	2074	2062
15	BP	3/93	S	14560	14140	14510	2625	14508	14455	14350	14245
15	C	3/93	L	2150	2112	2126	187	2145	2141	2131	2121
15	CC	3/93	S	6600	5800	6575	3000	6500	6400	6200	6000
15	CO	3/93	S	921	869	897	519	915	908	895	882
15	GC	4/93	L	3342	3286	3310	560	3335	3328	3314	3300

15	HO	4/93	L	5700	5420	5551	1176	5665	5630	5560	5490	5455
15	LC	6/93	L	7405	7260	7325	580	7387	7369	7332	7296	7278
15	MB	6/93	S	10000	9926	9929	187	10000	9931	9929	9927	9926
15	O	3/93	L	1422	1372	1382	250	1415	1410	1396	1384	1377
15	OJ	3/93	S	7150	6725	6995	637	7097	7044	6937	6831	6778
15	PB	3/93	S	3780	3540	3750	912	3750	3720	3660	3600	3570
15	S	3/93	S	5750	5632	5732	587	5735	5721	5691	5661	5645
15	TB	3/93	L	9712	9699	9705	325	9711	9709	9705	9702	9700
15	TX	3/93	L	9560	9330	9396	1150	9532	9503	9445	9387	9368
15	W	7/93	L	3292	3170	3176	612	3276	3262	3231	3200	3184
20	BD	3/93	L	2138	2050	2080	528	2127	2116	2094	2072	2061
20	CC	3/93	S	6600	5500	6575	4125	6463	6325	6050	5775	5637
20	FC	3/93	L	6600	8350	8415	1100	8569	8538	8475	8412	8381
20	GC	4/93	L	3342	3286	3310	560	3335	3328	3314	3300	3293
20	GI	5/93	L	10140	9920	9945	550	10113	10085	10030	9975	9947
20	HO	4/93	L	5720	5410	5551	1302	5682	5643	5565	5487	5448
20	LC	4/93	S	7965	7660	7915	1220	7927	7889	7812	7736	7698
20	MB	6/93	S	10000	9926	9929	187	10000	9931	9929	9927	9926
20	NY	5/93	S	6400	5900	6370	2500	6338	6275	6150	6025	5962
20	O	3/93	L	1440	1372	1382	337	1432	1423	1405	1387	1380
20	OJ	5/93	S	7500	7080	7365	630	7448	7395	7290	7185	7132
20	PB	3/93	S	3780	3535	3750	931	3750	3719	3657	3596	3565
20	QL	4/93	L	6090	5610	5791	2016	6030	5970	5850	5730	5670
20	S	3/93	S	5820	5634	5732	925	5796	5773	5726	5681	5656
20	TB	3/93	L	9712	9699	9705	325	9711	9709	9705	9702	9700
20	W	7/93	L	3294	3170	3176	625	3280	3263	3232	3201	3184

The first three columns identify the future, D is the preferred direction (S[hort] is for a close above the midpoint, L[ong] for closes below), UP-LIM AND LW-LIM are the upper and lower bracket limits, CLOSE is settlement price, \$RNG is the dollar distance between the upper and lower bracket limits. OCT, QUAD, MID, QUAD, and OCT divide the range between UP-LIM and LW-LIM by one-eighth partitions: 1/8, 2/8, 4/8, 6/8, and 7/8, respectively.

risk. For instance, day-trading a bracket with only a \$100 range, like the five-day corn at the top of the list, offers a potential of somewhat less than half the range, or less than \$50. Considering commissions and risk, this trade is not worth the trouble. There are too many more potentially profitable markets to examine. Of course, day traders may go with breakouts also. But there the reward-to-risk ratio is not so well defined.

Position traders are initiating, looking for breakouts, cases where the market condition is changing from bracket to trend. Consequently, they are most interested in markets with longer-term stability, those with more than one time frame bracketing. If both short- and long-term brackets

exist, the market is more likely to be really bracketing, not just pausing. A quick survey of the bracket screen, Table 4-3, shows the multiple brackets of Table 4-4.

A responsive day trader following the octant method of the text finds risk by dividing the range by 8 with a potential reward 3 times the risk. A trade in the 5-day T-bills (TB) risks \$25 for a potential reward of \$75. For the 5-day coffee (CC), risk is \$145, reward is \$435.

Note that the ranges are generally larger for longer time periods. That gives the breakout trader a road map: a market going from bracket to trend will typically break the 5-day, next the 10-day, and so on. The 5-day has the lowest risk. As breakouts occur from the longer time frames, the octant risk can be switched. This provides a low-risk way to step positions.

Internal Trends

An advantage of the 5-, 10-, 15-, 20-day Overlay set is in its detection of internal trends. Markets in long-term trading ranges often have internal trends before a breakout from a 20-day Overlay signals the change of condition to trend. In many cases the shorter 5-day and 10-day brackets are embedded within the longer-term bracket. When a trend starts, it becomes apparent first at the 5-day level with a breakout. Then comes a breakout of the 10-day Overlay. So too for the 15-day. When this type of market action takes place, the trend is detected while it is still far down inside the long-term market. An obvious corollary of detecting a series of breakouts is a simple low-risk trading scheme based on accruing additional positions with each subsequent breakout.

Table 4-4. Multiple bracketing contracts from the Bracket Screen of February 19, 1993

	5 DY	\$	10 DY	\$	15 DY	\$	20 DY	\$
TB	X	200	X	225	X	325	X	325
GC	X	490	X	580	X	560	X	560
OJ	X	487	X	750	X	637		
TX	X	675	X	950	X	1150		
CC	X	1162			X	3000	X	4125
CO	X	229	X	379	X	519		
C	X	100	X	137	X	187		
LC	X	380	X	600			X	1220
PB	X	475			X	912	X	931

The dollar amounts are for the entire bracket range.

Conclusion

Market understanding is the goal of Overlay Demand Curve analysis. Both volume- and TPO-based Overlays can be used, but for most situations the TPO Overlays offer the best stability and structure for analysis.

The normal starting point is a market in a bracket. A market in balance can be analyzed, it can be understood. It has little lag and fluctuation. The market's structure, the shape and form of the price-volume distribution, is the first measure of the quality of the information. A clean bell-shaped structure indicates a stable market, one for which the market condition can be used to locate reference points (bracket limits and value). If the structure is ragged, value is known with poor accuracy if at all.

Bracket time lengths can be as short as four or five days and as long as the data permits. For most analytical purposes, the set of four time frames covering 5, 10, 15, and 20 days is adequate. The shorter times can provide internal information on the behavior of the longer brackets.

Earlier, we noted several reference points developed by the Overlay Demand Curves. There are some more general observations that might be typed as reference rules: Analysis starts with a bracket. Absolute minimum bracket length is three days. Maximum bracket length needed for most cases is 20 days.

Non-bell-shaped distributions are poor bracket indicators. Longer (20-day) brackets may have internal trends. False breakouts are markets' way of widening brackets. Trend end is usually signaled by a return of price to a prior node.

Overlays are used in different ways by different trader types. Both the day and position trader need to locate bracket limits. The day trader also uses value as a target for responsive trades. For both, the bracket screen permits a quick search of the entire marketplace. Brackets from the screen provide a large class of potential trading candidates, each of which give the regions of expected and unexpected market behavior.

5

Trade Selection

Trade selection in Value Based Power Trading begins with a survey of all the bracketing futures on the bracket screen. Potential trading candidates are sorted out by looking for futures with consistency, for those with several brackets (5, 10, 20 days), and for those with the requisite profit potential. The day trader is first looking for futures with wide brackets, for trades with the potential for substantial moves within the day. Market-offered opportunity in such markets has the attraction of large potential profit with small risk, a large reward-to-risk ratio. Other day traders are willing go with breakouts for short-term profits. In this case, only the risk is known, because the trader selects a stop-loss point. Just how far the market might go, the potential profit, is not known.

Position traders seek breakouts. They are willing to hold for the long term in the hope of large profits. They screen first on consistency, on those futures with several time frames in a bracket. Their brackets must be substantially wider than the average daily trading range. Selected futures must be facilitating trade, volume must be normal or larger than normal. Market structure should be regular and smooth. In short, the market must be well-behaved.

The next step is to examine the Overlay Demand Curves for their structure. The key is value. Where is value on the graphic? If value cannot be located unambiguously, the risk is probably large and this one should be rejected. Can the standard reference points be located? Are they consistent from time frame to time frame?

What about the Rotation Index/Quadrant of Close; is there an alert for breakout? What are the commercial traders doing? Is there any capping; are there any changes to the Overlay graphic from commercial action?

Lastly, are there any clues from the former day's trading? Was the day accumulating or distributing? How did it end? Are there any special conditions like new contract highs or lows?

Trade selection is really a study in market understanding, in the analysis of reference points. A market is defined by its reference points. If the reference points are missing or ambiguous, the market is poorly defined and the trader does not have a good handle on risk. Three basic reference points fundamental to our analysis are the upper and lower bracket limits and the value region. The quality of the market structure, the distribution, controls the quality of these three reference points. Other reference points that can have a big impact on a trade are commercial capping (support and resistance), commercial trend leading, the Rotation Index alert, and the short-term reference points related to the Day Review. Several others (e.g., public trend leading) are important from time to time. Each reference point clarifies something about the market; put them all together and you have market understanding.

The CISCO Trader Control Package

CISCO has set up a step-by-step procedure to develop the Value Based Power Trading reference points in an automated way. It is, of course, computer-based. The requirement to be able to survey the entire market and then analyze selected candidates quickly puts a substantial burden on the support system. Preprocessing of the Overlays, the brackets table, commercial activity, and reviews of the latest day's trading is a must. The aim is to be able to analyze any selected future with all its brackets (5, 10, 15, and 20 days) within five minutes or so.

With the support system in place, the trader can quickly get the data needed to generate the trading reference points for any future. The trader selects the future(s), and the computation process is automatic. Remember, the market offers few low-risk trading opportunities each day. Traders must have an efficient screening process to sort out the good candidates. The process of generating and accessing information, the support system, makes it possible to find the opportunities for low-risk trading. As Marshall McLuhan said about television, "the medium is the message," so here, "the support system is the solution."

It is instructive to follow the path of a trader who has elected to analyze the July live hogs on May 22, 1992. Listed below are the steps. Note that there are elements introduced in the Trader Control Package that have not appeared in our explanations before. Certain Overlay and distribution data are listed just below the 20-day Overlay (and all other Overlays). For bracketing markets there is a listing of the entire bracket range broken down in eighths of the range. This is called "Extended Overlay Analysis" and is used for a quick estimate of trading points and risk-to-reward ratios. Note that there are three Overlays, 20-, 10-, and 5-day, each with

its own analyses. Then, following the commercials' tables, comes the Day Market Review. This has three parts; TPO analysis with commentary, accumulation/distribution calculations, and lastly, a half-hour bar chart with ticks, as in Figure 1-2.

It may appear daunting at first, but this entire process should be completed in five minutes, ending with a thorough understanding of the live hogs current market condition and the governing reference points. We know the limits for all the bracketing Overlays, our trading reference points, based on, but not necessarily identical with, the octants. We know whether the commercials have changed the limits by setting newer support and resistance and how the latest day behaved, especially near the close. We should end up with a graphic similar to Figure 5-21 for T-bonds, July 21, 1992, except with limits from all three periods posted along with the commercial reference points.

Running the Trader Control Package

"Information is not enough. You must also know what to do with it."

All four elements; Screen, Overlay™, Commercial Analysis, and Day Review have been brought together in a single item. This grouping is called the Trader Control Package, because of the high level of control it affords the trader. This is a step-by-step application of Overlays™ and related data to the market. Below is an example of the use of the package in trade selection and evaluation.

This is a hands-on system. You will select, validate, and confirm your trading choices. In order:

1. You make your trade selection from a futures screen.
2. You set your reward-to-risk level from the reference points on the screen.
3. You validate your proposed trade with the basic underlying demand curve.
4. You confirm your selection by reference to the commercial trader.
5. You get the current economic behavior of the market from the Day Review.

This information base gives you, the trader, quantitative control of the trade selection, confirmation, and risk limitation in a way never before possible.

The Trader Control Package is objective. The procedure is standardized. The system automatically takes you through the following steps:

The complete process [F] for a given future includes all of items 1 through 4 (below). Each item can be called up separately at any time to answer a particular question.

1. *Screen [S]*, provides a listing of all bracketing markets and an extended listing (reference points) of markets of your choice. You select the best, most profitable ones that suit you. This permits you to develop your reward-to-risk pattern.
2. *Overlay Demand Curve™ [O]* to verify that your selection is "well behaved," that is, not too volatile to trade safely, as some bracketing markets are. (A smooth, regular demand curve is a well-behaved market.)
3. *Commercial Volume Analysis [C]* to validate the directionality of the market(s) you have chosen. "If the commercials are selling, you should not be buying."
4. *Day Review* to understand the latest market activity. What was the market *trying* to do yesterday?

######[screen]#####

EXAMPLE

MENU 4 ITEM 38: The Trader Control Package (Sample run)

Be sure your data are ready:

CBOT LDB reports for 22 MAY 92 are ready (3rd rec)

MERC LDB reports for 22 MAY 92 are ready

Menu 4-30 OVERLAY(tm) reports for 22 MAY 92 are ready

Menu 4-40 DAY REVIEW reports for 22 MAY 92 are ready

Is your data ready? Are the dates correct? If yes, type [Y],
if not, type [N] and <enter>

==Y

Put your system in capture mode, or turn on your printer.

Put CAPITAL LOCK on. Press return <enter> to continue.

== <CR>

Doing set-up. Please wait.

######[end screen]#####

The first screen you will see gives you a chance to verify that your data are ready and prompts you to set your system to capture mode (or turn on your printer) and put CAPS LOCK on. (In the screen displays, your response to questions is identified by the symbol ==.) When you have verified that you are ready, you press RETURN (ENTER) to continue.

The Trader Control Package offers you two options: You can examine your market by parts, individually selecting [S] for screen, [O] for Overlay™, [C] for commercial, or [D] for Day Review; or, for speed and completeness, select [F] to cover a future entirely in one pass. We will select [F].

```
######[screen]#####
Sel: Screen [S], Overlay™ [O], Comml [C], Day-Rev [D]
Future [F], or End [E]
==F
######[end screen]#####
```

In the screen of all bracketing futures, you can control the size of the list by specifying the bracket range (\$). This is the dollar range from bracket top to bracket bottom. The larger the dollar amount you screen on, the fewer candidates listed. We will select \$500.

A bracket extends from upper limit to midpoint to lower limit. A day trader cannot expect a trade potential of more than somewhat less than half of the range, e.g., going short near the top of the range (upper limit) and exiting near the midpoint (50/50 directional probability point). A position trader looks for a breakout from the upper or lower limits.

```
######[screen]#####
Complete analysis on a future-by-future basis.
You just input the future and day(s) in the Overlay(tm).
Each future you select will have its Overlay(tm), Extension, Commercial
Activity and Day Review listed.
```

```
Do you want the Bracket Screen? [Y] or [N]
==Y
```

```
Input YOUR desired minimum Bracket Range in $ [500]
==500
######[end screen]#####
```

Figure 5-1. Bracket Screen for May 22, 1992

Current Date 5 22 92

DY	FUTURE	D	UPPER	LOWER	CLOSE	\$RNG
5 BC	6 92	S	35930	35480	35710	1125
5 ID	6 92	S	9920	9898	9909	4400
5 ID	9 92	S	9938	9918	9929	4000
5 II	6 92	L	9022	9016	9017	1200
5 U2	6 92	L	10118	10018	10027	1000
5 U2	9 92	L	10014	9915	9924	968
10 B0	7 92	L	2136	2050	2054	516
10 C	9 92	L	2644	2530	2546	575
10 ED	9 92	L	9591	9566	9570	625
10 FC	8 92	L	7650	7515	7542	594
10 H0	6 92	L	5830	5540	5629	1218
10 H0	7 92	L	5790	5540	5653	1050
10 ID	6 92	S	9920	9885	9909	7000
10 ID	9 92	S	9938	9903	9929	7000
10 II	6 92	L	9024	9016	9017	1600
10 II	9 92	S	9064	9049	9062	3000
10 JY	6 92	S	7764	7644	7732	1500
10 MB	6 92	L	9604	9510	9521	812
10 MU	6 92	S	10764	10710	10750	1687
10 QA	6 92	L	23080	22650	22815	2150
10 SP	6 92	L	41890	41070	41415	4100
15 BP	9 92	S	17880	17800	17842	500
15 C	9 92	L	2634	2530	2546	525
15 ED	6 92	L	9615	9593	9600	550
15 FC	8 92	L	7650	7525	7542	550
15 H0	6 92	L	5820	5550	5629	1134
15 H0	8 92	L	5820	5655	5725	693
15 ID	6 92	S	9918	9882	9909	7200
15 ID	9 92	S	9936	9898	9929	7600
15 II	9 92	S	9064	9045	9062	3800
15 LH	6 92	L	4855	4670	4712	555
15 LH	7 92	L	4655	4485	4512	510
15 QA	6 92	L	23070	22660	22815	2050
15 SP	6 92	L	41870	41100	41415	3850
20 BP	9 92	S	17880	17800	17842	500
20 CC	7 92	S	6600	6050	6350	2062
20 FC	8 92	L	7665	7525	7542	616
20 H0	6 92	L	5820	5470	5629	1470
20 H0	7 92	L	5770	5540	5653	966
20 H0	8 92	L	5820	5655	5725	693
20 ID	9 92	S	9936	9898	9929	7600
20 LC	8 92	L	7165	6945	6987	880
20 LH	6 92	L	4880	4670	4712	630

20 LH	7	92	L	4675	4485	4512	570
20 QL	6	92	L	6640	6270	6394	1554
20 QL	7	92	L	6610	6260	6424	1470
20 SP	6	92	S	41860	40780	41415	5400
20 SU	7	92	L	974	926	947	537

The resulting analysis in Figure 5-1 is as of the close on Friday, May 22, 1992, to be used for trading in the market of Tuesday, May 26 (Memorial Day was May 25).

You now have a list of all futures that are bracketing with a bracket range of \$500 or more. (A list of symbols can be found in Appendix D.) The DY column is the number of days in the Overlay™, D identifies the preferred direction for day trading, UPPER and LOWER are the bracket limits, CLOSE is the day's settlement, and \$RNG is the range from UPPER to LOWER in dollars. From this group you can select the future(s) that you want to study in more detail. This will be just the first cut; verification must follow.

```
######[screen]#####
Input Overlay(tm) Future [JY], [U2], [W],...[ZZ]=END
==LH
Input Delivery Month [3],..., [12]
==7
```

Figure 5-2. Bracket Screen for July 1992 hogs, May 22, 1992

Screen for LH, 7							
DY	FUTURE	D	UPPER	LOWER	CLOSE	\$RNG	
05 LH	7	92	L	4580	4482	4512	294N
10 LH	7	92	L	4650	4485	4512	495N
15 LH	7	92	L	4655	4485	4512	510Y
20 LH	7	92	L	4675	4485	4512	570Y

All four Overlay time frames (5-, 10-, 15, and 20-day) are bracketing

```
######[end screen]#####
```

You can analyze markets that are not bracketing. The first item listed, however, is a set of Overlays™ showing bracket. When we choose live hogs (LH) for July (7), we find that all four Overlays™ were bracketing.

We can select one or more of the four Overlays™ for July hogs. Unless you are very familiar with a market, it is a good idea to look at the longer

term (20 days) as well as the shorter term. We will select 20-, 10-, and 5-day Overlays. The Overlays will display in the order selected.

```
######[screen]#####
Input Days in Overlay(tm) [10], [5,20],...
==20,10,5
######[end screen]#####
```

The characters in the Rotation Profile (Figures 5-3, 5-7, and 5-10) show the day and its range, and hence the rotation (by examination). The latest day is 9, five days back is 4, 10 days back is Z, 15 days back is V, and so on.

Rotation indexes of 0.42 for the 8-day Overlay™ and 0.67 for the 4-day in Figure 5-5 are in the trend range (0.6 or below) for the 8-day but not for the 4-day. The close in quadrant 4 for the 8-day and quadrant 3 for the 4-day is net neutral. There is no alert, just a small tendency to the down side on the basis of the 8-day.

Extension sections (Figures 5-6, 5-9, and 5-12) break the bracket range into eighths (and sixths for the sextant) to give a quick reward-to-risk picture for the responsive trader. The \$Pot is the potential gain from going short near the top or long near the bottom; and \$Risk is the risk assuming a stop out at the limit. For example, following the 20-day Overlay in Figure 5-6, a short at the upper octant at 4652 has a potential gain of \$216 if the market subsequently rotates to the middle (4580), with a risk of \$72 if the price goes past the upper limit (4675). Trading at the octant has a reward-to-risk ratio of 3 to 1, at the sextant it is 2 to 1, and the quadrant is 1 to 1.

You have your reward-to-risk reference points from the Extension section. Comparing the 20-, 10-, and 5-day Overlays™ can help confirm your choice(s). Look for symmetry and location of the center of value. When was the bracket built? Recently, or earlier? One distribution or more?

Figure 5-3. Twenty-day TPO Overlay for July 1992 hogs, May 22, 1992

TPO OVERLAY AND PRICE ROTATION PROFILE				
JUL 92 L HOGS (CME)			04 27 92 TO 05 22 92	
PRICE	DYS	L/F	ROT PROFILE *	TPOS TPO VOL OVERLAY *
4690	1	P	P	3 XXX
4685	1	P	P	4 XXXX
4680	1	P	P	4 XXXX
4675	2	P	PY	6 XXXXX
4670	2	P	PY	7 XXXXXX
4665	3	P	PY2	7 XXXXXX
4660	3	P	PY2	7 XXXXXX
4655	3	P	PY2	8 XXXXXX
4650	4	P	PRY2	12 XXXXXXXXXXX
4645	6	P	PRXY2	17 XXXXXXXXXXXXXXX
4640	9	P	PRSXY123	23 XXXXXXXXXXXXXXXXXXX
4635	10	P	PRSUXYZ123	27 XXXXXXXXXXXXXXXXXXXXXXX
4630	11	P	PQRSUXYZ123	27 XXXXXXXXXXXXXXXXXXXXXXX
4625	13	P	PQRSTUWXYZ123	34 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
4620	12	P	PQRSTUWXYZ123	42 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
4615	10		QRSTUWXYZ13	42 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
4610	10		QRSTUWXYZ13	40 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
4605	10		QRSTUWXYZ13	37 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
4600	9		QRSTUWX13	29 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
4595	10		QRSTUWX134	26 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
4590	11		QRSTUWX1346	19 XXXXXXXXXXXXXXXXXXXXXXX
4585	6		TUVX46	14 XXXXXXXXXXXXXXX
4580	6		TVX456	20 XXXXXXXXXXXXXXXXXXX
4575	6		TVX456	21 XXXXXXXXXXXXXXXXXXX
4570	6		TVX456	18 XXXXXXXXXXXXXXX
4565	7		TVWX456	21 XXXXXXXXXXXXXXXXXXX
4560	5		VW456	17 XXXXXXXXXXXXXXX
4555	5		VW456	15 XXXXXXXXXXXXXXX
4550	5		VW456	19 XXXXXXXXXXXXXXXXXXX
4545	4		VW56	15 XXXXXXXXXXXXXXX
4540	5	9	VW569	15 XXXXXXXXXXXXXXX
4535	6	9	VW5679	14 XXXXXXXXXXXXXXX
4530	6	9	VW5679	14 XXXXXXXXXXXXXXX
4525	5	9	VW679	13 XXXXXXXXXXXXXXX
4520	5	9	W6789	15 XXXXXXXXXXXXXXX
4515	4	9	6789	16 XXXXXXXXXXXXXXX
4510	4	9	6789	17 XXXXXXXXXXXXXXX
4505	4	9	6789	15 XXXXXXXXXXXXXXX
4500	4	9	6789	13 XXXXXXXXXXXXXXX
4495	3	9	789	11 XXXXXXXXX
4490	3	9	789	8 XXXXXXX
4485	3	9	789	7 XXXXXXX
4480	1		7	1 X
4475	1		8	1 X

Figure 5-4. Twenty-day Overlay Distribution Analysis for July 1992

OVERLAY ANALYSIS: Entire Overlay

Close 4512 Ten day: Average range 56 Maximum range 92

Number prices in overlay 44 Total TPOs 741

Trade facilitation factor (TPOs/prices/days) = 0.84

TPO Control Price (HPTP) 4615: TPOs Above and Below Control 228 469

DISTRIBUTION INFO: Minimum Dist = 4 Prices, 5 TPOs. Latest day symb = 9

There is/are 1 Distribution(s) in this Overlay

DIST# HIGH MXTPO LOW PEAKTPOs

1 4675 4620 4485 42

Close in Distribution # 1. Limits = 4675 4485

Quadrant 1-2 Division Pt: 4628.

Quadrant 3-4 Division Pt: 4532.

Each quadrant is approx. 47.

Figure 5-5. Eight- and four-day Rotation Index and Quadrant of Close for July hogs, May 22, 1992

ROTATION INDEX AND QUADRANT OF CLOSE

TRD DATE	HI	LO	8 DY CLO		4 DY CLO		DAY
			RI	QD	RI	QD	ID
05 18 92	4580	4530	0.67	4	0.42	3	5
05 19 92	4592	4500	0.50	4	0.50	4	6
05 20 92	4535	4480	0.42	4	0.58	4	7
05 21 92	4520	4475	0.50	4	0.67	4	8
05 22 92	4540	4485	0.42	4	0.67	3	9

Note: Bracketing RI ==> 1, Trending RI ==> 0

High Quad QD ==> 1, Low Quad QD ==> 4

Figure 5-6. Twenty-day Extension for July 1992 hogs, preferred direction L, May 22, 1992

Extended Overlay(tm) Analysis for:

20 LH 7 92 Preferred Dir = L

Location	Price	\$Pot	\$Risk
Upper Limit	4675		
Octant	4652	216	72
Sextant	4644	192	96
Quadrant	4628	144	144
Mid Dist	4580		
Quadrant	4532	144	144
Sextant	4516	192	96
Octant	4508	216	72
Lower Limit	4485		

Figure 5-7. Ten-day TPO Overlay and rotation profile for July 1992 hogs, May 22, 1992

THE CISCO TPO OVERLAY WITH THE ROTATION PROFILE
5-20 DEMAND CURVE ANALYSIS
LH 7: 10 DAY OVERLAY

TPO OVERLAY AND PRICE ROTATION PROFILE
JUL 92 L HOGS (CME) 05 11 92 TO 05 22 92

PRICE	DYS	L/F	ROT	PROFILE *	TPOS	TPO VOL	OVERLAY *
4665	1		2		1	X	
4660	1		2		2	XX	
4655	1		2		2	XX	
4650	1		2		4	XXXX	
4645	1		2		6	XXXXXX	
4640	3		123		7	XXXXXXX	
4635	4	Z	2123		9	XXXXXXXX	
4630	4	Z	2123		9	XXXXXXXX	
4625	4	Z	2123		10	XXXXXXXXXX	
4620	4	Z	2123		17	XXXXXXXXXXXXXXXXXX	
4615	3	Z	213		14	XXXXXXXXXXXXXXXX	
4610	3	Z	213		12	XXXXXXXXXXXX	
4605	3	Z	213		13	XXXXXXXXXXXX	
4600	2		13		7	XXXXXX	
4595	3		134		7	XXXXXX	
4590	4		1346		5	XXXXX	
4585	2		46		5	XXXXX	
4580	3		456		13	XXXXXXXXXXXX	
4575	3		456		16	XXXXXXXXXXXXXXXXXX	
4570	3		456		13	XXXXXXXXXXXX	
4565	3		456		13	XXXXXXXXXXXX	
4560	3		456		8	XXXXXXX	
4555	3		456		6	XXXXXX	
4550	3		456		8	XXXXXXX	
4545	2		56		6	XXXXXX	
4540	3	9	569		6	XXXXXX	
4535	4	9	5679		6	XXXXXX	
4530	4	9	5679		6	XXXXXX	
4525	3	9	679		8	XXXXXXX	
4520	4	9	6789		13	XXXXXXXXXXXX	
4515	4	9	6789		16	XXXXXXXXXXXXXXXXXX	
4510	4	9	6789		17	XXXXXXXXXXXXXXXXXX	
4505	4	9	6789		15	XXXXXXXXXXXXXXXXXX	
4500	4	9	6789		13	XXXXXXXXXXXX	
4495	3	9	789		11	XXXXXXXXXX	
4490	3	9	789		8	XXXXXXX	
4485	3	9	789		7	XXXXXXX	
4480	1		7		1	X	
4475	1		8		1	X	

Figure 5-8. Ten-day Overlay distribution Analysis for July 1992 hogs, May 22, 1992**OVERLAY ANALYSIS:** Entire Overlay

Close 4512 Ten day: Average range 56 Maximum range 92
 Number prices in overlay 39 Total TPOs 341

Trade facilitation factor (TPOs/prices/days) = 0.87

TPO Control Price (HPTP) 4620: TPOs Above and Below Control 49 272

DISTRIBUTION INFO: Minimum Dist = 4 Prices, 3 TPOs. Latest day symb = 9

There is/are 1 Distribution(s) in this Overlay

DIST# HIGH MXTPO LOW PEAKTPOs

1 4650 4620 4485 17

Close in Distribution # 1. Limits = 4650 4485

Quadrant 1-2 Division Pt: 4609.

Quadrant 3-4 Division Pt: 4526.

Each quadrant is approx. 41.

Figure 5-9. Ten-day Extension for July 1992 hogs, preferred direction L, May 22, 1992

Extended Overlay(tm) Analysis for:

10 LH 7 92 Preferred Dir = L

Location	Price	\$Pot	\$Risk
Upper Limit	4650		
Octant	4630	189	63
Sextant	4623	168	84
Quadrant	4609	125	125
Mid Dist	4567		
Quadrant	4526	125	125
Sextant	4512	168	84
Octant	4505	189	63
Lower Limit	4485		

Figure 5-10. Five-day TPO Overlay and rotation profile for July 1992 hogs, May 22, 1992

Overlay(tm) and Extension for 5 days.

THE CISCO TPO OVERLAY WITH THE ROTATION PROFILE

5-20 DEMAND CURVE ANALYSIS

LH 7: 5 DAY OVERLAY

TPO OVERLAY AND PRICE ROTATION PROFILE

JUL 92 L HOGS (CME)

05 18 92 TO 05 22 92

PRICE DYS L/F ROT PROFILE * TPOS TPO VOL OVERLAY *

4592	1		6		1	X
4590	1		6		1	X
4587	1		6		1	X
4585	1		6		1	X
4582	1		6		2	XX
4580	2	5	56		5	XXXXX
4577	2	5	56		6	XXXXXX
4575	2	5	56		8	XXXXXXXXX
4572	2	5	56		7	XXXXXXXX
4570	2	5	56		10	XXXXXXXXXX
4567	2	5	56		10	XXXXXXXXXX
4565	2	5	56		10	XXXXXXXXXX
4562	2	5	56		7	XXXXXXX
4560	2	5	56		7	XXXXXXX
4557	2	5	56		5	XXXXX
4555	2	5	56		5	XXXXX
4552	2	5	56		7	XXXXXXX
4550	2	5	56		7	XXXXXXX
4547	2	5	56		6	XXXXXX
4545	2	5	56		6	XXXXXX
4542	2	5	56		5	XXXXX
4540	3	59	569		6	XXXXXX
4537	3	59	569		4	XXXX
4535	4	59	5679		6	XXXXXX
4532	4	59	5679		5	XXXXX
4530	4	59	5679		6	XXXXXX
4527	3	9	679		6	XXXXXX
4525	3	9	679		8	XXXXXXXX
4522	3	9	679		9	XXXXXXXXX
4520	4	9	6789		13	XXXXXXXXXXXX
4517	4	9	6789		14	XXXXXXXXXXXX
4515	4	9	6789		16	XXXXXXXXXXXX
4512	4	9	6789		17	XXXXXXXXXXXX
4510	4	9	6789		17	XXXXXXXXXXXX
4507	3	9	789		13	XXXXXXXXXXXX
4505	4	9	6789		15	XXXXXXXXXXXX
4502	3	9	789		12	XXXXXXXXXXXX
4500	4	9	6789		13	XXXXXXXXXXXX
4497	3	9	789		10	XXXXXXXXXX
4495	3	9	789		11	XXXXXXXXXX

4492	3	9	789	10	XXXXXXXXXX
4490	3	9	789	8	XXXXXXXXXX
4487	3	9	789	7	XXXXXXXXXX
4485	3	9	789	7	XXXXXXXXXX
4482	2		78	4	XXXX
4480	1		7	1	X
4475	1		8	1	X

Figure 5-11. Five-day Overlay distribution Analysis for July 1992 hogs, May 22, 1992

OVERLAY ANALYSIS: Entire Overlay

Close 4512 Ten day: Average range 56 Maximum range 92

Number prices in overlay 47 Total TPOs 356

Trade facilitation factor (TPOs/prices/days) = 1.51

TPO Control Price (HPTP) 4512: TPOs Above and Below Control 206 127

DISTRIBUTION INFO: Minimum Dist = 4 Prices, 3 TPOs. Latest day symb = 9

There is/are 1 Distribution(s) in this Overlay

DIST# HIGH MXTPO LOW PEAKTPOs

1 4580 4512 4482 17

Close in Distribution # 1. Limits = 4580 4482

Quadrant 1-2 Division Pt: 4556.

Quadrant 3-4 Division Pt: 4506.

Each quadrant is approx. 24.

The Commercial Traders Volume Analysis section measures commercial activity in three ways: VOL/PRICE TIC is the average trading volume above the value area and below the value area per price tick compared to the average within the value area; VALUE AREA compares the total volume above and below the value area to the total volume in the value area; and QUADRANT looks only at the volume in the first (upper), and fourth (lower) quarters of the price range. Using the three rules below the data in Figure 5-13 ("Significant action is:"), we note that during the price drop of the past 10 days, the Upper Commercial Action has gone from 46350 on May 11 to 45200 on May 21. As the market has been falling, the commercials have been consistently selling tops. They have also been consistently lowering their buying price from 45875 on May 14 to 44800 on May 20. Currently, a resistance at 45200 to 45800 with support in the neighborhood of 44800 to 45000. A downside breakout of this range could signal a continuation of the downtrend. Breakout on the upside could signal a complete reversal of the market condition, from down-to-flat to up.

Figure 5-12. Five-day Extension for July 1992 hogs, preferred direction L, May 22, 1992

Extended Overlay(tm). Analysis for:

5 LH 7 92 Preferred Dir = L

Location	Price	\$Pot	\$Risk
Upper Limit	4580		
Octant	4568	111	37
Sextant	4564	99	49
Quadrant	4556	75	75
Mid Dist	4531		
Quadrant	4506	75	75
Sextant	4498	99	49
Octant	4494	111	37
Lower Limit	4482		

The Day Review (Figure 5-14) covers the day's activity from the standpoint of the Market Profile™ (see Dalton, Jones, and Dalton 1990) and from the accumulation/distribution activity. The day is broken into half-hour periods, and these are analyzed for their accumulation/distribution characteristics. It is possible for accumulation and distribution to be intermixed, as when a market is distributing (say upward) while still maintaining its accumulation envelope.

The worksheet of Figure 5-15 is to be prepared by the trader, using Overlays from the Trader Control Package.

Selection of a Day Trade

Day trades take place entirely within the confines of a single day. There are many ways to day-trade. Some traders "tick chase," watching for recurring tick patterns, others do point-figure, yet others trade oscillators, etc. The approach of the Value Based Power Trader is to look for low-risk trades, ones where the market is in a bracket, value is known, and price is away from value. As long as the market stays in a trading range, price will return to value. If price breaks out of the bracket, value

may have changed and the market can have a run. Many day traders will take either responsive or breakout trades.

Our starting point, then, is a bracketing market, like June 1992 T-bonds, as of May 7, 1992. We will follow the reports of Figures 5-16 through 5-25 in our discussion of this market. This market is in a well-defined bracket over the entire 20-day period from April 16 through May 7. As day traders, our focus is on the short term, so we will trade the 5-day Overlay. Five-day brackets are defined by a minimum of three TPOs. This one extends from 9909 to 9809, making one-eighth of the bracket range (octant) almost exactly 4 points.

Trading Rules, Day

1. The market must be in a bracket.
2. An alert for a responsive long is triggered when price falls below the lower octant (between the lower bracket limit and one octant up). The long is placed when price then crosses above the octant.
3. An alert for a responsive short is triggered when price rises above the upper octant (between the upper bracket limit and one octant down). The short is placed when price then crosses below the octant.
4. The target price for a responsive trade is the middle of the bracket. The stop-loss price for a responsive trade is the bracket limit. Responsive trades not stopped out are liquidated at the close.
5. Breakout trades are taken when price goes above or below the bracket. Breakout trades have a stop-loss point at the octant. Breakout trades not stopped out are liquidated on the close.

Figure 5-13. Commercial Volume Analysis for July 1992 hogs, May 22, 1992

The CISC Commercial Traders Volume Analysis

Commercial analysis, ten days with averages.

If less than ten days listed, there was too little activity. CBOT ready about 10:30 PM, CME 6 AM.

					VOL/PRICE TIC				VALUE AREA				QUADRANT	
DATE	HIGH	LOW	CLOSE	CTI	V-AB	V-VA	V-BL	%TOT	%ABV	%VA	%BLO	%QD1	%QD4	
05 22 92	45400	44825	4512	2	33	100	0	1.8	0.3	1.5	0.0	16.4	47.5	
05 21 92	45200	44750	4482	2	45	100	25	0.2	0.2	0.0	0.0	80.0	0.0	
05 20 92	45325	44800	4485	2	0	100	300	1.3	0.0	0.4	1.0	9.3	69.8	
05 19 92	45925	45000	4505	2	0	100	62	0.7	0.0	0.2	0.5	5.6	72.2	
05 18 92	45800	45300	4565	2	61	100	0	0.2	0.2	0.0	0.0	75.0	0.0	
05 15 92	45950	45500	4552	2	0	100	180	3.4	0.0	1.7	1.7	0.0	49.5	
05 14 92	46400	45875	4615	2	0	100	0	0.7	0.0	0.7	0.0	0.0	76.5	
05 13 92	46650	46200	4645	2	71	100	0	4.4	1.6	2.8	0.0	37.0	0.0	
05 12 92	46400	45900	4632	2	44	100	0	11.8	0.5	11.3	0.0	90.9	0.0	
05 11 92	46350	46050	4610	2	4	100	0	16.2	1.0	15.2	0.0	0.0	27.3	
AVERAGE					2	25	100	56	4.1	0.4	3.4	0.3	31.4	34.3

Commercial Activity Review (10 days max.). Significant action is:

VOL/PRICE TIC: Values of 70 or more.

VALUE AREA: Fifty percent greater than the average.

QUADRANT: Fifty percent greater than the average.

05 21	Upper Comm	Action: 45200			QUADRANT
05 20	Lower Comm	Action: 44800	VOL/PRICE	VALUE AREA	QUADRANT
05 19	Lower Comm	Action: 45000			QUADRANT
05 18	Upper Comm	Action: 45800			QUADRANT
05 15	Lower Comm	Action: 45500	VOL/PRICE	VALUE AREA	
05 14	Lower Comm	Action: 45875			QUADRANT
05 13	Upper Comm	Action: 46650	VOL/PRICE	VALUE AREA	
05 12	Upper Comm	Action: 46400			QUADRANT
05 11	Upper Comm	Action: 46350		VALUE AREA	

Figure 5-14. Day Review for July 1992 hogs, May 22, 1992**The CISCO Latest Day Market Review**

Includes a review of the markets numbers,
 A commentary on the recent market direction,
 The distribution(s) of the trading,
 Accumulation/distribution analysis,
 And, half-hour bar chart of the tick volume.
 Call CISCO if you experience difficulty.

MARKET REVIEW L HOGS (CME)

LH 07 92

	CURRENT DAY 05 22 92	PREVIOUS 05 21 92
OPEN	4485	4505
HIGH	4540	4520
LOW	4485	4475
CLOSE	4512	4482
HIGH VAL PRICE (POC)	4512	4500
VALUE AREA	4527 - 4505	4512 - 4492
TPO's, TOTAL	60	72
TPO's, ABOVE POC	33	32
TPO's, BELOW POC	14	32
TRADE FACILITATION FACTOR	2.61	4.24
SHAPE FACTOR	6.74	5.35
ATTEMPTED DIR U, D or blank	U	D
VALUE AREA DIR H, A, Z or L or bl	A	

Commentary on market direction:

Today's Point of Control is higher.

Today's attempted direction is up. Yesterdays was down.

The Value Area direction is overlapping higher.

Shape-Distribution: Minimum Distrib = 4 Prices, 1 TPO.

There is/are 1 Distribution(s) on this day.

DIST# HIGH POC LOW POC-TPOs

1 4535 4522 4500 5

ACCUMULATION/DISTRIBUTION BY PERIOD

The half-hour periods are: CDEFGHIJ

The first pd is 20 min; the rest are 30.

The market was balancing (accumulating) for 3 half-hour period(s)
 from 4 to 6 (F to H).

The accumulation price region was 4525 4510.

NOTE: The accumulation envelope was tilting downward. Thus there
 was downward distribution during the "accumulation" phase.

A DOWN distribution began in period 6 where the bracket envelope was 4510 and the low was 4510. Next period low was 4505.

HALF-HOUR AUCTIONS FOR THE DAY.

	C	D	E	F	G	H	I	J
4540						2		
4537						4		
4535					1	2		
4532					1	3		
4530					3	3		
4527		1			2	2		
4525		3	5		2	6		
4522		2	2	2	2	1		
4520		4	9	2	3	6		
4517		5	6	6	1	1		
4515		6	6	3	2	1		
4512		3	1	1	2			
4510		3		1	1	1		
4507	1							1
4505	2	5						1
4502		1						
4500	2	2						
4497	1							
4495	4							
4492	6							
4490	9							
4487	1							
4485	2							

Figure 5-15. Worksheet in preparation of trading for July 1992 hogs, May 26, 1992

Worksheet: Preparation for trading on May 26

TPO OVERLAY AND PRICE ROTATION PROFILE

JUL 92 L HOGS (CME) 04 27 92 TO 05 22 92

PRICE	TPOS	TPO VOL	OVERLAY *	20 DY	10 DY	5 DY
4690	3	XXX				
4685	4	XXXX				
4680	4	XXXX				
4675	6	XXXXX		U LIM		
4670	7	XXXXXX				
4665	7	XXXXXX				
4660	7	XXXXXX				
4655	8	XXXXXXX		OCTNT		
4650	12	XXXXXXXXXX			U LIM	
4645	17	XXXXXXXXXXXXXX				
4640	23	XXXXXXXXXXXXXXXXXX				
4635	27	XXXXXXXXXXXXXXXXXXXXXX				
4630	27	XXXXXXXXXXXXXXXXXXXXXX			OCTNT	
4625	34	XXXXXXXXXXXXXXXXXXXXXXXXXX				
4620	42	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX				
4615	42	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX				
4610	40	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX				
4605	37	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX				
4600	29	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX				
4595	26	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX				
4590	19	XXXXXXXXXXXXXXXXXXXXXX				
4585	14	XXXXXXXXXXXXXX				
4580	20	XXXXXXXXXXXXXXXXXXXXXX		MIDDLE		U LIM
4575	21	XXXXXXXXXXXXXXXXXXXXXX				
4570	18	XXXXXXXXXXXXXX				OCTNT
4565	21	XXXXXXXXXXXXXXXXXXXXXX			MIDDLE	
4560	17	XXXXXXXXXXXXXX				
4555	15	XXXXXXXXXXXXXX				
4550	19	XXXXXXXXXXXXXX				
4545	15	XXXXXXXXXXXXXX				
4540	15	XXXXXXXXXXXXXX				
4535	14	XXXXXXXXXXXXXX				
4530	14	XXXXXXXXXXXXXX				MIDDLE
4525	13	XXXXXXXXXXXXXX				
4520	15	XXXXXXXXXXXXXX	<== U Commercial (weak)			
4515	16	XXXXXXXXXXXXXX	<== Close			
4510	17	XXXXXXXXXXXXXX		OCTNT		
4505	15	XXXXXXXXXXXXXX			OCTNT	
4500	13	XXXXXXXXXXXXXX				
4495	11	XXXXXXXXXX				OCTNT
4490	8	XXXXXX				
4485	7	XXXXX		L LIM	L LIM	L LIM
4480	1	X	<== L Commercial			
4475	1	X				

Reference Points:

Limits, octants, commercials are shown on the Overlay.

Rotation: OK (From eyeball scan of ROT PROFILE)

Rotation Index: No Alert: 8 day RI = trend, QD = down, 4 day RI rotating

Profile: TPO pressure down, Point of control, Value Area and
Accumulation/distribution all up.

Volume: OK (5/22 = 1906, ten day average = 1709)

Trade Facilitation Factor: OK (less than 4.0)

Conclusion: Market in normal bracket condition.

Breakout downside below 4480

Stop 4508 (20 day), 4505 (10 day), 4495 (5 day)

Responsive long @ 4510 (20 day), 4505 (10 day), 4495 (5 day)

Target 4580 (20 day), 4567 (10 day), 4531 (5 day)

Breakout upside: 4580 (5 day), 4650 (10 day), 4675 (20 day)

Stop 4568 (5 day), 4630 (10 day), 4652 (20 day)

Responsive short @ 4568 (5 day), 4630 (10 day), 4652 (20 day)

Target 4580 (20 day), 4567 (10 day), 4531 (5 day)

Note: Responsive trading and stops are set to the octants. This gives a theoretical reward to risk ratio of three. The trader can choose another level, say the sextant, with a reward to risk ratio of two, but a generally higher probability of trading.

Market of May 26: Open 4505, low 4505, high 4550, close 4535.

Trading: Price between 4508 and 4485 constitutes an alert on the 20 day Overlay. There was no downside breakout. A responsive long is initiated at 4510 with a target of 4580 and a stop of 4485. Target was not reached, at close the open trade equity of 25 points equalled a \$75 gain.

The 10 day octant was hit at 4505 but no trading occurred between 4505 and 4495, so there was no alert on the 10 day.

Comment: This market is in a good position for cumulative trading on the upside. An internal trend would breakout of the 5 day at 4568, then the 10 day at 4650 and finally, 4665 for the 20 day. At each new trade the protective stop could become the new octant (or trader selected reference point). At breakout of the 20 day there would be three contracts on, which could be managed as desired.

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Figure 5-16. Five-day TPO Overlay and rotation profile for June 1992 T-bonds, May 7, 1992

```

JUN 92 T-BOND (CBOT) DAY    05 01 92 TO 05 07 92

PRICE DYS  L/F ROT PROFILE *  TPDS TPO VOL OVERLAY *
9910 1      8      8          2 XX
9909 1      8      8          4 XXXX < Upper limit
9908 1      8      8          6 XXXXXX
9907 2      8     78          9 XXXXXXXXX
9906 2      8     78         10 XXXXXXXXXX
9905 2      8     78          9 XXXXXXXXX
9904 2      8     78          9 XXXXXXXXX
9903 2      8     78          9 XXXXXXXXX
9902 2      8     78          9 XXXXXXXXX
9901 2      8     78         10 XXXXXXXXXX
9900 2      8     78          9 XXXXXXXXX
9831 2      8     78          5 XXXXX
9830 2      8     78          4 XXXX
9829 2      8     78          4 XXXX
9828 2      8     78          4 XXXX
9827 3     48    478          7 XXXXXXX
9826 3     48    478         11 XXXXXXXXXXXX < Upper v-r
9825 3     48    478         14 XXXXXXXXXXXXXXXX < Middle
9824 3     48    478         14 XXXXXXXXXXXXXXXX
9823 3      4    467         16 XXXXXXXXXXXXXXXX
9822 3      4    467         18 XXXXXXXXXXXXXXXX
9821 3      4    467        26 XXXXXXXXXXXXXXXXXXXX < Control
9820 3      4    467        25 XXXXXXXXXXXXXXXXXXXX
9819 4      4    4567        24 XXXXXXXXXXXXXXXXXXXX
9818 3      4    456        24 XXXXXXXXXXXXXXXXXXXX
9817 3      4    456        18 XXXXXXXXXXXXXXXX
9816 3      4    456        14 XXXXXXXXXXXXXXXX
9815 3      4    456        15 XXXXXXXXXXXXXXXX
9814 3      4    456        13 XXXXXXXXXXXXXXXX
9813 3      4    456        13 XXXXXXXXXXXXXXXX
9812 3      4    456        11 XXXXXXXXXXXXXXXX
9811 3      4    456         9 XXXXXXXX < Lower v-r
9810 3      4    456         7 XXXXXXX
9809 2      56          4 XXXX < Lower limit
9808 2      56          2 XX

```

Determination of Reference Points

A. Analysis of the Overlay Demand Curve

The Overlay Demand Curve (Figure 5-16) might be showing two distributions, centered at 9904 and 9820, respectively. It looks as if the

market had been bracketing three days ago and then had a breakout. That is what happened: The 5-day Overlay of April 29 through May 5 was bracketing with limits of 9826 to 9728. Today's distribution, however, fits the basic definition of a single distribution, with no TPO counts under three between upper and lower limits, so we will treat it as a bracket. The skewness of the distribution will cause the arithmetic middle to be offset from the control, or point of high value, the price at the maximum number of TPOs. The limits are 9909 and 9809, with a middle at 9825. There are 384 TPOs between the limits. The region of value is found in the about the same way as the value area for the Market Profile; starting with the high TPO and adding the next high and so on until the count reaches 268, which is 70 percent of the TPOs. Thus, the value region is 9826 to 9811.

Reference points from the Overlay itself are as follows:

Upper limit: 9909

Lower limit: 9809

Middle: 9825

Value region, v-r: 9826 to 9811

B. The Rotation Index/Quadrant of Close

The Rotation Index and Quadrant of Close (Figure 5-17) have four elements. The rotation indexes for the 8-day Overlay and the 4-day Overlay are both 0.50, indicating internal rotation within the bracket. One close is in the upper price quadrant, one is in a middle quadrant. Three out of the four elements suggest that a breakout, if it comes, will be on the long side.

Reference point, Rotation Index/Quadrant of Close: Alert for upside breakout.

C. Commercial Activity

Commercial activity (Figure 5-18) shows support on May 7 at 9824 and on May 6 at 9819 (quadrant only, the weakest type). Upper commercial capping has a pattern of rising since April 30: 9812, 9827, 9819, 9823, and finally, on May 6, at 9907.

Commercial reference points:

Resistance: 9907 (the latest in a rising group)

Support: about 9820

Figure 5-17. Eight- and four-day Rotation Index and Quadrant of Close for June 1992 T-bonds, May 7, 1992

ROTATION INDEX AND QUADRANT OF CLOSE

TRD DATE	HI	LO	8 DY CLO		4 DY CLO		DAY
			RI	QD	RI	QD	
05 01 92	9827	9810	0.83	1	0.58	1	4
05 04 92	9819	9808	0.75	1	0.67	2	5
05 05 92	9823	9808	0.67	1	0.67	1	6
05 06 92	9907	9819	0.58	1	0.58	1	7
05 07 92	9910	9824	0.50	1	0.50	2	8

Figure 5-18. Commercial Volume Analysis for June 1992 T-bonds, May 7, 1992

C. Commercial Activity

CT12 STUDY FOR: U2 06 92

					VOL/PRICE TIC				VALUE AREA				QUADRANT	
DATE	HIGH	LOW	CLOSE	CTI	V-AB	V-VA	V-BL	%TOT	%ABV	%VA	%BLO	%QD1	%QD4	
05 07 92	9910	9824	9828	2	0	100	34	16.5	0.0	12.3	4.2	26.8	4.7	
05 06 92	9907	9819	9906	2	41	100	0	15.7	3.2	12.5	0.0	12.5	44.3	
05 05 92	9823	9808	9821	2	18	100	18	16.4	0.8	12.6	3.1	30.1	9.3	
05 04 92	9819	9808	9815	2	34	100	20	14.1	2.5	10.9	0.8	12.4	16.0	
05 01 92	9827	9810	9822	2	14	100	22	16.0	0.5	12.7	2.8	30.2	10.7	
04 30 92	9812	9727	9804	2	27	100	30	15.0	0.8	10.9	3.4	34.3	7.4	
04 29 92	9815	9726	9731	2	24	100	36	13.4	1.9	8.7	2.8	9.6	11.4	
04 28 92	9814	9709	9809	2	2	100	80	14.6	0.0	10.9	3.7	16.9	18.4	
04 27 92	9809	9722	9723	2	14	100	99	15.5	0.9	11.5	3.1	5.6	29.9	
04 24 92	9815	9728	9808	2	22	100	36	15.8	0.6	11.2	4.1	18.8	10.3	
AVERAGE				2	19	100	37	15.3	1.1	11.4	2.8	19.7	16.2	

Commercial Activity Review (10 days max.). Significant action is:

VOL/PRICE TIC: Values of 70 or more.

VALUE AREA: Fifty percent greater than the average.

QUADRANT: Fifty percent greater than the average.

05 07 Lower Comm Action:	9824	VALUE AREA
05 06 Upper Comm Action:	9907	VALUE AREA
Lower Comm Action:	9819	QUADRANT
05 05 Upper Comm Action:	9823	QUADRANT
05 04 Upper Comm Action:	9819	VALUE AREA
05 01 Upper Comm Action:	9827	QUADRANT
04 30 Upper Comm Action:	9812	QUADRANT
04 29 Upper Comm Action:	9815	VALUE AREA
04 28 Lower Comm Action:	9709 VOL/PRICE	
04 27 Lower Comm Action:	9722 VOL/PRICE	QUADRANT

D. Day Review

The review of the latest day, May 7, lists TPO analyses showing that today's point of control (maximum TPO price) is higher than the previous day's, as is the value-area direction. Accumulation/distribution has a tilt downward, with a down distribution to finish the day.

E. Liquidity Data Bank (optional)

We might wonder what caused the down thrust at the end of the day. The LDB, with just the prices 9831 and below, indicates that there was public selling to cause the price drop. Note that the public trading (column %Cti4) is relatively large, compared to the day's average of 25.4 percent of the volume at 9830 and at 9828 to 9824. At the same time, the commercials were quiet. Had value changed, there is a good chance the commercials would have known it and joined the parade that the public was leading. As of the close, the evidence for the start of a downward trend is small.

Where is value? From the Overlay alone, value ranges from 9826 to 9811, with the nominal center at 9825. When the commercial reference points are taken into account, the Overlay is truncated around 9818. The other reference points offer an alert for breakout on the upside, strength on the point of control, and value-area movement, and the weakness at the end of the day is not confirmed.

Now we have a good picture of the market. Upside potential seems fine, but the lower part of the distribution is in question. Our decision is to trade in the upper part of the distribution only. That is, we look for an upside breakout and we will take responsive shorts because they are confined to the upper half of the distribution. Trading below the midpoint would be "high risk" as compared to the low-risk trading potential of responsive shorts.

Instructions for T-bonds to be day-traded on May 8 are as follows:

The upper limit is 9909.

The upper octant is at 9905.

At breakout (9910), go long; stop = 9905.

Price above 9905, below 9910: alert for responsive short.

If alerted for responsive short, go short at 9904 stop.

Stop = 9910.

Target = 9825.

Figure 5-19. Day Review for June 1992 T-bonds, May 7, 1992

```

MARKET REVIEW T-BOND (CBOT) DAY
U2 06 92
CURRENT DAY 05 07 92    PREVIOUS 05 06 92
OPEN                    9906                    9823
HIGH                    9910                    9907
LOW                     9824                    9819
CLOSE                   9828                    9906
HIGH VAL PRICE (POC)    9903                    9824
VALUE AREA              9908 - 9901            9827 - 9820
TPO's, TOTAL            95                      77
TPO's, ABOVE POC        46                      28
TPO's, BELOW POC        37                      31
TRADE FACILITATION FACTOR 5.00                  3.67
SHAPE FACTOR            5.74                    6.35
ATTEMPTED DIR U, D or blank
VALUE AREA DIR H, A, Z or L or bl H

```

Commentary on market direction:

Today's Point of Control is higher.

Today's attempted direction is unclear. Yesterday's was unclear.

The Value Area direction is higher.

Shape-Distribution: Minimum Distrib = 4 Prices, 1 TPO.

There is/are 1 Distribution(s) on this day.

DIST# HIGH POC LOW POC-TPOs

1 9910 9903 9825 11

ACCUMULATION/DISTRIBUTION BY PERIOD

The half-hour periods are: yzABCDEFGHIJKLM

The first pd is 10 min; the rest are 30.

The market was balancing (accumulating) for 4 half-hour period(s)
from 3 to 6 (A to D).

The accumulation price region was 9904 9900.

An UP distribution began in period 6 where the bracket envelope was
9904 and the high was 9909. Next period high was 9910.

The market was balancing (accumulating) for 6 half-hour period(s)
from 8 to 13 (F to K).

The accumulation price region was 9909 9901.

NOTE: The accumulation envelope was tilting downward. Thus there
was downward distribution during the "accumulation" phase.

A DOWN distribution began in period 13 where the bracket envelope was
9901 and the low was 9825. Next period low was 9824.

HALF-HOUR AUCTIONS FOR THE DAY.

	y	z	A	B	C	D	E	F	G	H	I	J	K	L	M
9910							4					5			
9909						5	32	8				16	7		
9908						23	75	10			3	30	8		
9907	1					33	50	15			19	27	3		
9906	11					18	4	25	6		40	12	6		
9905	23					8		26	9	1	35	3	9		
9904	19	4		1	25	10		14	29	10	14		17		
9903	7	31	7	17	44	6		1	44	31	8		16		
9902	2	49	18	37	19				21	35	7		14		
9901		49	32	24					2	25	3		25		
9900		36	22	4						11			23		
9831		9	2										29	3	
9830													31	30	
9829													17	64	
9828													7	59	
9827													5	39	
9826													11	24	
9825													6	8	
9824														1	

Selection of a Position Trade

The position trader is looking for trends near their beginning. The earliest that most trends can be recognized is when they break out of a trading range. Strategy for the position trader, then, is to monitor bracketing markets. The starting point is the same as that for the day trader in the previous section, a thoroughly analyzed bracket with a high degree of market understanding. The position trader has a longer time viewpoint and thus will be interested in markets with more stability than day traders. Position traders seek markets with brackets at least 10 days long in the financials, which come into balance relatively quickly, up to 15- to 20-day balances in grains and other groups.

Using the approach of the Trader Control Package at the beginning of this chapter, we find a bracketing market, the September 1992 T-bonds on July 21, 1992, analyzed in Figures 5-22 through 5-28.

Figure 5-20. LDB report for June 1992 T-bonds, May 7, 1992

CHICAGO BOARD OF TRADE				LIQUIDITY DATA BANK* REPORT				
PARTIAL VOLUME/FUTURES SUMMARY REPORT FOR 05 07 92								
T-BOND (CBOT) DAY				JUN 92				
Price	Volume	%Vol	%Cti1	%Cti2	%Cti3	%Cti4	Brackets	
9831	16774	2.8	52.7	25.8	0.9	20.6	*AKL	
9830	24774	4.1	57.2	13.6	1.9	27.3	KLM	
9829	28404	4.7	58.5	16.5	1.7	23.3	KLM	
9828	15039	2.5	54.1	18.6	1.6	25.6	KLM	
9827	17924	3.0	55.7	16.6	1.7	26.1	L	
9826	14159	2.3	63.1	8.7	1.3	27.0	L	
9825	5466	0.9	54.9	8.2	0.4	36.4	L	
9824	1316	0.2	50.0	0.0	0.0	50.0	L	
70%	9909	440883	73.1	55.2	16.8	2.3	25.7 Z\$ABCDEFGHIJK	
V-A	9901							
					%CTI1	%CTI2	%CTI3	%CTI4
Volume for T-BOND (CBOT) DAY JUN 92					603525	56.0	16.5	2.1 25.4
Volume for all T-BOND (CBOT) DAY					608627	56.0	16.4	2.1 25.4

Day Review reference points:

Strength in the point of control and value area.

Weakness at the end of day (discounted).

Reference point (LDB): no new trend at end of day.

The distribution is well defined. From the Overlay itself (Figure 5-22), breakout probability is about equal in either direction. Strength in the point of control and value area tip the balance slightly to the upside.

The trader has a choice of strategies. One can wait for breakout from the 10-day Overlay, ignoring the 5-day. Since the 5-day Overlay lies wholly within the 10-day, a breakout of the 5-day might offer an early entry into a developing trend. In either case, the stop-loss point must be determined. For day trading the stop-loss was an octant, one-eighth of the bracket range. Longer-term trading potential for gain is greater, the

**Figure 5-21. Five-day TPO Overlay and rotation profile for June 1992
T-bonds, May 7, 1992, with reference points on the graphic**

TPO OVERLAY AND PRICE ROTATION PROFILE					
JUN 92 T-BOND (CBOT) DAY 05 01 92 TO 05 07 92					
PRICE	DYS	L/F	ROT	PROFILE *	TPOS TPO VOL OVERLAY *
9910	1	8	8		2 XX
9909	1	8	8		4 XXXX < Upper limit
9908	1	8	8		6 XXXXXX < Commercial resistance
9906	2	8	78		10 XXXXXXXXXXXX
9904	2	8	78		9 XXXXXXXXXXXX < Alert for upside
9902	2	8	78		9 XXXXXXXXXXXX breakout
9900	2	8	78		9 XXXXXXXXXXXX
9830	2	8	78		4 XXXX
9828	2	8	78		4 XXXX
9826	3	48	478		11 XXXXXXXXXXXX
9825	3	48	478		14 XXXXXXXXXXXXXXXX < Middle
9824	3	48	478		14 XXXXXXXXXXXXXXXX
9822	3	4	467		18 XXXXXXXXXXXXXXXX
9820	3	4	467		25 XXXXXXXXXXXXXXXXXXXXXXXX < Control
9818	3	4	456		24 XXXXXXXXXXXXXXXXXXXXXXXX < Commercial
9816	3	4	456		14 XXXXXXXXXXXXXXXX support
9814	3	4	456		13 XXXXXXXXXXXXXXXX
9813	3	4	456		13 XXXXXXXXXXXXXXXX < Lower octant
9812	3	4	456		11 XXXXXXXXXXXX
9810	3	4	456		7 XXXXXX
9809	2		56		4 XXXX < Lower limit
9808	2		56		2 XX

time held is longer, normal market fluctuation ranges will be bigger; so a somewhat larger risk is reasonable. An octant for the 10-day bracket is 5 points or \$156.

An advantage of understanding the market is being able to set the risk more intelligently (the "power" in Value Based Power Trading). The middle of the distribution is the 50 percent point. If we have a breakout and price returns there, no direction is indicated. This is an absolutely worst-case situation, 20 points from breakout. At an earlier point within the bracket, somewhere around the octant, price closer to the middle implies that the bracket dynamics govern. We use this concept in setting up responsive day trades.

**Figure 5-22. Ten-day TPO Overlay and rotation profile for September 1992
T-bonds, July 21, 1992**

10 DAY TPO OVERLAY AND PRICE ROTATION PROFILE
SEP 92 T-BOND (CBOT) DAY 07 08 92 TO 07 21 92

PRICE	DYS	L/F	ROT	PROFILE *	TPOS	TPO VOL	OVERLAY *
10308	1		U		1	X	
10306	1		U		1	X	
10304	1		U		1	X	
10302	1		U		2	XX	
10300	1		U		3	XXX	
10290	2		UY		5	XXXXX	
10228	3	S	SUY		5	XXXXX	
10226	3	S	SUY		6	XXXXXX	
10224	4	S	STUY		11	XXXXXXXXXX	
10222	5	S	STUYZ		24	XXXXXXXXXXXXXXXXXXXX	
10220	6	S	STUXYZ		31	XXXXXXXXXXXXXXXXXXXX	
10218	7	S2	STUXYZ2		35	XXXXXXXXXXXXXXXXXXXX	
10216	8	S2	STUXYZ12		29	XXXXXXXXXXXXXXXXXXXX	
10214	8	S2	STUXYZ12		37	XXXXXXXXXXXXXXXXXXXX	
10212	6	2	UXYZ12		38	XXXXXXXXXXXXXXXXXXXX	
10210	6	2	UXYZ12		37	XXXXXXXXXXXXXXXXXXXX	
10208	6	2	UXYZ12		27	XXXXXXXXXXXXXXXXXXXX	
10206	4		XYZ1		21	XXXXXXXXXXXXXXXXXXXX	
10204	5		VXYZ1		23	XXXXXXXXXXXXXXXXXXXX	
10202	5		VWXYZ		27	XXXXXXXXXXXXXXXXXXXX	
10200	4		VWXY		25	XXXXXXXXXXXXXXXXXXXX	
10130	3		VWY		19	XXXXXXXXXXXXXXXXXXXX	
10128	1		W		11	XXXXXXXXXX	
10126	1		W		5	XXXXX	

The ten day Overlay Demand Curve is solidly a single distribution. Value is well defined with today's trading in the center of the distribution.

Reference points for the ten day Overlay:

Upper limit: 10300
Lower limit: 10126
Middle: 10213
Value region, v-r: 10222 to 10204

Figure 5-23. Ten-day Rotation Index and Quadrant of Close for September 1992 T-bonds, July 21, 1992

ROTATION INDEX AND QUADRANT OF CLOSE

TRD DATE	HI	LO	8 DY CLO RI	QD	4 DY CLO RI	QD	DAY ID
07 15 92	10220	10200	0.75	2	0.42	2	X
07 16 92	10231	10129	0.67	2	0.58	1	Y
07 17 92	10223	10201	0.83	3	0.75	3	Z
07 20 92	10216	10204	0.67	3	0.83	3	1
07 21 92	10219	10208	0.83	3	0.75	3	2

Reference point, Rotation Index/Quadrant of Close: No alert.

Figure 5-24. Eight- and four-day TPO Overlay and rotation profile for September 1992 T-bonds, July 21, 1992

5 DAY TPO OVERLAY AND PRICE ROTATION PROFILE
SEP 92 T-BOND (CBOT) DAY 07 15 92 TO 07 21 92

PRICE	DYS	L/F	ROT	PROFILE *	TPOS	TPO	VOL	OVERLAY *
10230	1		Y		1	X		
10228	1		Y		2	XX		
10226	1		Y		4	XXXX		
10224	1		Y		4	XXXX		
10222	2		YZ		7	XXXXXXX		
10220	3	X	XYZ		7	XXXXXXX		
10218	4	X2	XYZ2		10	XXXXXXXXXX		
10216	5	X2	XYZ12		13	XXXXXXXXXXXX		
10214	5	X2	XYZ12		25	XXXXXXXXXXXXXXXXXXXXXXXXXXXX		
10212	5	X2	XYZ12		36	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX		
10210	5	X2	XYZ12		36	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX		
10208	5	X2	XYZ12		26	XXXXXXXXXXXXXXXXXXXXXXXXXXXX		
10206	4	X	XYZ1		21	XXXXXXXXXXXXXXXXXXXX		
10204	4	X	XYZ1		19	XXXXXXXXXXXXXXXXXX		
10202	3	X	XYZ		12	XXXXXXXXXXXX		
10200	2	X	XY		5	XXXXX		
10130	1		Y		2	XX		

Reference points for the five day Overlay:

Upper limit: 10226
Lower limit: 10200
Middle: 10212
Value region, v-r: 10214 to 10204

Figure 5-25. Commercial Volume Analysis for September 1992 T-bonds, July 21, 1992

CTI2 STUDY FOR: U2 09 92

					VOL/PRICE TIC				VALUE AREA				QUADRANT	
DATE	HIGH	LOW	CLOSE	CTI	V-AB	V-VA	V-BL	%TOT	%ABV	%VA	%BLO	%QD1	%QD4	
07 21 92	10219	10208	10214	2	15	100	8	15.1	2.4	12.0	0.7	3.3	4.9	
07 20 92	10216	10204	10214	2	19	100	23	15.9	1.4	11.8	2.8	8.7	6.9	
07 17 92	10223	10201	10203	2	43	100	25	16.3	3.2	11.7	1.4	16.5	8.4	
07 16 92	10231	10129	10226	2	65	100	20	17.6	4.3	13.1	0.2	18.9	27.5	
07 15 92	10220	10200	10217	2	35	100	12	16.7	4.4	12.2	0.2	16.3	43.3	
07 14 92	10203	10125	10131	2	25	100	44	17.9	1.9	12.6	3.4	10.8	7.3	
07 13 92	10206	10129	10200	2	10	100	11	16.7	1.5	14.4	0.8	1.7	18.7	
07 10 92	10308	10208	10211	2	68	100	15	16.7	4.0	12.2	0.5	17.0	14.1	
07 09 92	10224	10213	10223	2	42	100	35	17.3	3.5	12.3	1.5	13.7	25.0	
07 08 92	10228	10213	10219	2	37	100	23	17.1	4.4	11.9	0.8	11.4	18.2	
AVERAGE					2	35	100	21	16.7	3.1	12.4	1.2	11.8	17.4

Commercial Activity Review (10 days max.). Significant action is:

VOL/PRICE TIC: Values of 70 or more.

VALUE AREA: Fifty percent greater than the average.

QUADRANT: Fifty percent greater than the average.

07 20 Lower Comm Action: 10204

VALUE AREA

07 16 Upper Comm Action: 10231

QUADRANT

Lower Comm Action: 10129

QUADRANT

07 15 Lower Comm Action: 10200

QUADRANT

07 14 Lower Comm Action: 10125

VALUE AREA

Commercial reference points:

Resistance: 10231 (old)

Support: 10204

Trading Rules: Position Trading

1. The market analyzed must be in a bracket.
2. An alert for a breakout long is triggered when price rises above the upper octant (between the upper bracket limit and the upper octant). The long is placed when price moves above the bracket.
3. An alert for a breakout short is triggered when price falls below the lower octant (between the lower bracket limit and the lower octant). The short is placed when price moves below the bracket.

4. There is no target price at the beginning of a trend. The stop-loss price for a trend trade is 1.5 octants from entry.
5. The initial stop-loss point is maintained until the first node forms.
6. After one or more nodes have formed, the trade is exited when price returns to the mid-point of the prior node.

Figure 5-26. Day Review for September 1992 T-bonds, July 21, 1992

```

MARKET REVIEW T-BOND (CBOT) DAY
U2 09 92
CURRENT DAY 07 21 92  PREVIOUS 07 20 92
OPEN                    10215          10206
HIGH                   10219          10216
LOW                    10208          10204
CLOSE                  10214          10214
HIGH VAL PRICE (POC)    10213          10210
VALUE AREA              10214 - 10211    10213 - 10209
TPD's, TOTAL            69             78
TPD's, ABOVE POC        21             39
TPD's, BELOW POC        28             23
TRADE FACILITATION FACTOR 5.75          6.00
SHAPE FACTOR            3.33           4.44
ATTEMPTED DIR  U, D or blank  D          U
VALUE AREA DIR  H, A, Z or L or bl  A

```

Commentary on market direction:

Today's Point of Control is higher.

Today's attempted direction is down. Yesterday's was up.

The Value Area direction is overlapping higher.

Shape-Distribution: Minimum Distrib = 4 Prices, 1 TPO.

There is/are 1 Distribution(s) on this day.

```

DIST#  HIGH  POC  LOW  POC-TPDs
1 10216 10213 10210   15

```

ACCUMULATION/DISTRIBUTION BY PERIOD

The half-hour periods are: yzABCDEFGHIJKLM

The first pd is 10 min; the rest are 30.

The market was balancing (accumulating) for 12 half-hour period(s)
from 3 to 14 (A to L).

The accumulation price region was 10215 10211.

HALF-HOUR AUCTIONS FOR THE DAY.

	y	z	A	B	C	D	E	F	G	H	I	J	K	L	M
10219														5	
10218														7	
10217														8	
10216				11		1								11	
10215	8			29		11	4					4	1	17	
10214	12			42	28	22	12	6		3	1	18	16	32	
10213	7	10	26	34	47	25	20	12	5	17	9	19	23	32	1
10212	17	43	33	11	29	9	16	6	23	22	9	5	8	21	
10211	13	53	7		11		4		25	9	1			15	
10210		19			1				8	1				10	
10209														7	
10208														1	

Day Review reference points:

Strength in the point of control and value area.
Close at value.

Now, collecting the reference points and posting them on the ten day Overlay:

Reference points for the ten day Overlay:

Upper limit: 10300
Lower limit: 10126
Middle: 10213
Value region, v-r: 10222 to 10204

Reference points for the five day Overlay:

Upper limit: 10226
Lower limit: 10200
Middle: 10212
Value region, v-r: 10214 to 10204

Reference point, Rotation Index/Quadrant of Close: No alert.

Commercial reference points:

Resistance: 10231 (old)
Support: 10204

Day Review reference points:

Strength in the point of control and value area.
Close at value.

**Figure 5-27. Ten-day TPO Overlay and rotation profile for September 1992
T-bonds, July 21, 1992**

```

10 DAY      TPO OVERLAY AND PRICE ROTATION PROFILE
SEP 92 T-BOND (CBOT) DAY      07 08 92 TO 07 21 92

PRICE DYS  L/F ROT PROFILE *  TPOS TPO VOL OVERLAY *
10308 1      U      1 X
10306 1      U      1 X
10304 1      U      1 X
10302 1      U      2 XX
10300 1      U      3 XXX < Upper limit 10 day
10290 2      UY      5 XXXXX < Comm resistance ??
10228 3  S    SUY      5 XXXXX
10226 3  S    SUY      6 XXXXXX < Upper limit 5 day
10224 4  S    STUY     11 XXXXXXXXXXXX
10222 5  S    STUYZ    24 XXXXXXXXXXXXXXXXXXXXXXXX
10220 6  S    STUXYZ   31 XXXXXXXXXXXXXXXXXXXXXXXXXXXX
10218 7  S2   STUXYZ2  35 XXXXXXXXXXXXXXXXXXXXXXXXXXXX
10216 8  S2   STUXYZi2 29 XXXXXXXXXXXXXXXXXXXXXXXXXXXX
10214 8  S2   STUXYZ12 37 XXXXXXXXXXXXXXXXXXXXXXXXXXXX < Middle
10212 6  2    UXYZi2   38 XXXXXXXXXXXXXXXXXXXXXXXXXXXX
10210 6  2    UXYZi2   37 XXXXXXXXXXXXXXXXXXXXXXXXXXXX
10208 6  2    UXYZi2   27 XXXXXXXXXXXXXXXXXXXXXXXXXXXX
10206 4      XYZ1      21 XXXXXXXXXXXXXXXXXXXXXXXX
10204 5      VXYZ1     23 XXXXXXXXXXXXXXXXXXXXXXXX < Comm support
10202 5      VWXYZ     27 XXXXXXXXXXXXXXXXXXXXXXXX
10200 4      VWXY      25 XXXXXXXXXXXXXXXXXXXXXXXX < Lower limit 5 day
10130 3      VWY       19 XXXXXXXXXXXXXXXXXXXXXXXX
10128 1      W         11 XXXXXXXXXXXX
10126 1      W         5 XXXXX < Lower limit 10 day

```

The octant is 5 points from breakout. Our stop-loss, in this case, should be somewhere between 5 and 20 points. Attitude toward risk is a very personal thing, and one trader's large risk is another's normal case. The conservative trader limits risk to avoid large losses, but establishing stops that are too small conflicts with market fluctuation. Paradoxically, attempting to limit risk too much ensures a high loss rate. In this case, we opt for a stop-loss of one and one-half octants, or 8 points (\$250).

Analysis of Trading for July 22

The low for the day, shown in Figure 5-28, is 10210, high is 10302. In D period the market moved up through 10221, alerting for a long breakout of the 5-day Overlay. In I period, the long position was taken at 10227. A

Figure 5-28. Half-hour auctions for September 1992 T-bonds, July 22, 1992

May 22 HALF-HOUR AUCTIONS FOR THE DAY.

	y	z	A	B	C	D	E	F	G	H	I	J	K	L	M
10302														9	
10301														43	2
10300														47	2
10231														37	
10230												1	3	33	
10229											2	31	12	9	
10228											21	47	23		
10227											31	19	13		
10226											12	2			
10225											2				
10224											2				
10223								9	5	14		7			
10222							17	40	10	23	6	11			
10221							35	68	29	20	25	6			
10220							36	46	31	10	21	1			
10219							25	9	7		2				
10218							16								
10217		2				6	25								
10216		7				11	25								
10215		9				8	10								
10214		13	7	4		8	1								
10213		15	29	16		14									
10212		5	38	26	10	12									
10211			20	14	24	3									
10210			4	1	14										

stop was immediately placed 8 points below, at 10219. Shortly thereafter, the 10-day Overlay alert was initiated at 10228. In L period, the long for the 10-day Overlay was confirmed. The day ended with 1 position long at 10227, for an open trade gain of six points (\$187).

Trade Selection, a Perspective

Value Based Power Trading is the amalgam of those various pieces of information that come from looking inside the market, by breaking a market into parts of days, by breaking a market into bits of information oriented to each traded price. It is a structured way of developing the market knowledge that leads to market understanding. The Overlay Demand Curves provide structure, the raw distribution information. The distribution is a first-level look at how the trading universe perceives the

marketplace, their response to the supply / demand situation, to value, in real time. If the distribution is rough and bumpy, the market's response indicates lack of knowledge or agreement on value. If the distribution is well behaved, if it is smooth and regular, the market's condition can be found. From market condition comes the understanding of value. Then, and only then, can the trader recognize prices that are away from value, prices that offer the trader opportunity.

6

Trade Management, Monitoring, and Exit

Trade selection is covered Chapter 5; day trading was differentiated from position trading, and examples, with reference points, were developed. Trading rules *for the examples only* were listed for both types. Now that information will be applied to trading situations.

Day Trading

From Chapter 5 we copy the analyses through May 7 (see Figure 5-21):

Reference Points for a Day Trade in June T-bonds on May 8, 1992

Reference points from the Overlay itself are:

Upper limit:	9909
Lower limit:	9809
Middle:	9825
Value region, v-r:	9826 to 9811

Reference point, Rotation Index/Quadrant of Close: Alert for upside breakout.

Commercial reference points:

Resistance:	9907 (the latest in a rising group)
Support:	about 9820

Day Review reference points:

- Strength in the point of control and value area.
- Weakness at the end of day (discounted).

Reference point (LDB):

- No new trend at end of day.

Reference points for the Overlay and the commercials indicate that the bracket upper limit at 9909 is not significantly different from the commercial resistance at 9907. So we let 9909 remain as the upper bracket limit. Reference points for both the Rotation Index/Quadrant of Close and the Day Review (see Figures 5-18 and 5-19) show strength on the upside,

preparing us for a potential upside breakout. Day trading the upper part of the bracket will follow the trading rules of the day-trading section in Chapter 5.

Instructions for T-bonds to be day-traded on May 8:

The upper limit is 9909.

The upper octant is at 9905.

At breakout (9910) go long; stop = 9905.

Price above 9905, below 9910: alert for responsive short.

If alerted for responsive short, go short at 9904 stop.

Stop = 9910.

Target = 9825.

On the bottom of the bracket, the bracket lower limit at 9809 is superseded by commercial capping at 9818. This chops up the low end, making trading decisions there unclear. Since the market situation at the bottom of the distribution is not well understood, there will be no day trading on that part of the Overlay.

Trading results for the day show four trades, -5, +11, -6, +23, for a net gain of +23 points (\$718) before slip and commissions. On the first trade, there was an open gain of 7 points before the collapse. Many day traders would not have allowed the trade to go from a gain of \$218 to a loss of \$156. For this illustration, we, of course, just follow the rules.

After the first trade decayed back into the alert region between the upper bracket limit (9909) and the upper octant (9905), the trader is prepared either to stay long (if the market starts back up) or to exit the trade at 9905 and go short responsively at 9904. This illustrates the dual nature of Value Based Power Trading. There is no preset forecast of market direction. Reference points locate where the market condition changes. If the market is trending, go with it; if bracketing, be a responsive trader. When the first (trend) trade fails, the second (responsive) position is initiated as a short with a target at the middle of the distribution. Upon reaching the target, the position is closed out. For about an hour, the market retraced upward until price once again entered the upper "alert" region (9905 to 9909). A dip triggered another responsive short, which is closed out within the hour (for a loss) on an upside reversal.

The breakout from the "alert" area and the resulting long position is confirmed throughout the rest of the day.

Day trading is an active pursuit, requiring constant attention. Most of the time nothing is happening, but when it does the trader must be ready. Many beginners decide to concentrate on one market, to get to know it

in detail. This is the route to success in the nontrading world; so it must be true of trading, right? Wrong! Any given market offers low-risk trading opportunity only rarely, and sometimes nothing happens for days. It is extremely difficult for a committed trader to do nothing for long periods. Watch the ticker, take no action; watch the ticker, take no action . . . boredom. Ennui. Monotony. The tendency is *to do something*, to force something to happen, even if it means putting on a high-risk trade. Value Based Power Trading offers a better way. Merely generate the reference points on several markets. Most will offer little opportunity. Just follow the ones that are close to hitting a reference point that may initiate a trade.

Position Trading

In the Position Trade section of Chapter 5, the September T-bonds were analyzed as of the close on July 21, 1992. Their reference points are the starting point for the trading analysis for the market of July 22.

Reference points for the 10-day Overlay:

Upper limit: 10300
 Lower limit: 10126
 Middle: 10213
 Value region, v-r: 10222 to 10204

Reference points for the 5-day Overlay:

Upper limit: 10226
 Lower limit: 10200
 Middle: 10212
 Value region, v-r: 10214 to 10204

Reference point, Rotation Index/Quadrant of Close: No alert.

Commercial reference points:

Resistance: 10231 (old)
 Support: 10204

Day Review reference points:

Strength in the point of control and value area.
 Close at value.

Collecting the reference points: On the upside the 10-day bracket limit at 10300 is very close to the (weak) commercial resistance at 10231; accept the 10-day limit at 10300. The 5-day limit is 10226. Breakout is at 10227, with confirmation at 10301. The 5-day range is 26 points, making the octant 3.25, which, times 1.5 (= 5, or \$156), is the stop.

On the bottom of the bracket, commercial support is at 10204, a 5-day limit at 10200, with the 10-day limit at 10126. For breakout, we will accept the 5-day limit, going short at 10127; confirmation at 10131.

Instructions for T-bonds to be position-traded on July 22:

The 5-day upper breakout is 10227.

Octant stop is 10222.

The 10-day upper breakout is 10301, confirming the 5-day.

The 5-day lower breakout is 10131.

Octant stop is 10204.

The 10-day lower breakout is 10125, confirming the 5-day.

The trading rules, repeated from Chapter 5 as follows:

Trading Rules, Position

1. The market analyzed must be in a bracket.
2. An alert for a breakout long is triggered when price rises above the upper octant (between the upper bracket limit and the upper octant). The long is placed when price moves above the bracket.
3. An alert for a breakout short is triggered when price falls below the lower octant (between the lower bracket limit and the lower octant). The short is placed when price moves below the bracket.
4. There is no target price at the beginning of a trend. The stop-loss price for a trend trade is 1.5 octants from entry.
5. The initial stop-loss point is maintained until the first node forms.
6. After one or more nodes have formed, the trade is exited when price returns to the mid-point of the prior node.

Trading on July 22

The market opened in the middle of the bracket, trading as low as 10210 in periods z, A, and B (7:30 to 9 A.M.). Throughout the day, prices rose and plateaued around 10221. In E period (10 to 10:30) price got as high as 10222, setting an alert for breakout (Rule 2), then dropping back below 10222. The same thing happened in F and G periods. Finally, in I period (12 to 12:30) the alert was triggered with the breakout following at 10227, where a long position was taken (Rule 2). A stop-loss was set

Figure 6-1. Half-hour auctions for June 1992 T-bonds, July 22, 1992

June 1992 T-bond, May 8: HALF-HOUR AUCTIONS FOR THE DAY.

[illegible]

The Trading:

On open:	Long @ 9910 (breakout)	
	Stop 9905	
0730:	Out 9905	-5
0730:	Short @ 9904 (responsive short)	
	Stop 9910	
	Target 9825	
0905:	Out 9825	+11
1010:	Short @ 9904 (responsive short)	
	Stop 9910	
	Target 9825	
1050:	Out 9910	-6
1050:	Long @ 9910 (breakout)	
	Stop 9905	
1400:	Out 10001	+23

at 10222 (Rule 4). This stop was not hit. The market closed at 10301, leaving an open trade profit of 6 points (\$188). This trading action can be followed on the half-hour auctions for the day plot of Figure 6-1.

At the close of trading (July 22) we have one long position at 10227 with a stop at 10222. The 10- and 5-day Overlays (Figures 6-2 and 6-4) show no node structure, so according to Rule 5, our stop for the next trading day remains at 10222. The close at 10301 is above the 5-day bracket, but still within the 10-day. There was some upper commercial action near the close (Figure 6-5), leaving open the question of whether the commercials are capping or going with the breakout. In Figure 6-6, we see that the public has a VOL/PRICE TIC above of 95, far above the 70 level used to confirm a significant V-AB for the commercials. VALUE AREA %ABV is 6.3, or 130 percent larger than the average of 4.8. Our conclusion is that the public is very strong and the evidence is that the commercials are going with the trend, rather than capping.

Figure 6-2. Ten-day Overlay for September 1992 T-bonds, July 22, 1992

10 DAY TPO OVERLAY AND PRICE ROTATION PROFILE
 SEP 92 T-BOND (CBOT) DAY 07 09 92 TO 07 22 92

PRICE	DYS	L/F	ROT	PROFILE *	TPOS	TPO	VOL	OVERLAY *
10308	1			U	1	X		
10306	1			U	1	X		
10304	1			U	1	X		
10302	2	3		U3	4	XXXX		
10300	2	3		U3	5	XXXX		
10230	3	3		UY3	7	XXXXXX		
10228	3	3		UY3	8	XXXXXX		
10226	3	3		UY3	7	XXXXXX		
10224	4	T3		TUY3	10	XXXXXXXX		
10222	5	T3		TUYZ3	23	XXXXXXXXXXXXXXXXXXXX		
10220	6	T3		TUXYZ3	26	XXXXXXXXXXXXXXXXXXXX		
10218	7	T3		TUXYZ3	27	XXXXXXXXXXXXXXXXXXXX		
10216	8	T3		TUXYZ123	27	XXXXXXXXXXXXXXXXXXXX		
10214	8	T3		TUXYZ123	37	XXXXXXXXXXXXXXXXXXXX		
10212	7	3		UXYZ123	43	XXXXXXXXXXXXXXXXXXXX		
10210	7	3		UXYZ123	41	XXXXXXXXXXXXXXXXXXXX		
10208	6			UXYZ12	27	XXXXXXXXXXXXXXXXXXXX		
10206	4			XYZ1	21	XXXXXXXXXXXXXXXXXXXX		
10204	5			VXYZ1	23	XXXXXXXXXXXXXXXXXXXX		
10202	5			VWXYZ	27	XXXXXXXXXXXXXXXXXXXX		
10200	4			VWXY	25	XXXXXXXXXXXXXXXXXXXX		
10130	3			VWY	19	XXXXXXXXXXXXXXXXXXXX		
10128	1			W	11	XXXXXXXXXX		
10126	1			W	5	XXXX		

Figure 6-3. Rotation Index and Quadrant of Close for September 1992 T-bonds, July 22, 1992

TRD DATE	HI	LO	8 DY CLO		4 DY CLO		DAY	ID
			RI	QD	RI	QD		
07 16 92	10231	10129	0.67	2	0.58	1	Y	
07 17 92	10223	10201	0.83	3	0.75	3	Z	
07 20 92	10216	10204	0.67	3	0.83	3	1	
07 21 92	10219	10208	0.83	3	0.75	3	2	
07 22 92	10302	10210	0.75	1	0.58	1	3	

5 DAY TPO OVERLAY AND PRICE ROTATION PROFILE
 SEP 92 T-BOND (CBOT) DAY 07 16 92 TO 07 22 92

The 8-day RI shows a bracket; the 4-day RI barely shows a trend (0.6 is the start); both 8-day and 4-day quadrants of close are 1. There is an alert to trend up (three out of the four indicators).

Figure 6-4. Five-day Overlay for September 1992 T-bonds, July 22, 1992

5 DAY		TPO OVERLAY AND PRICE ROTATION PROFILE		SEP 92 T-BOND (CBOT) DAY		07 16 92 TO 07 22 92	
PRICE	DYS	L/F	ROT	PROFILE *	TPOS	TPO VOL	OVERLAY *
10302	1	3	3		2	XX	
10300	1	3	3		2	XX	
10230	2	Y3	Y3		3	XXX	
10228	2	Y3	Y3		6	XXXXXX	
10226	2	Y3	Y3		6	XXXXXX	
10224	2	Y3	Y3		5	XXXXX	
10222	3	Y3	YZ3		12	XXXXXXXXXXXX	
10220	3	Y3	YZ3		12	XXXXXXXXXXXX	
10218	4	Y3	YZ23		9	XXXXXXXXXX	
10216	5	Y3	YZ123		14	XXXXXXXXXXXX	
10214	5	Y3	YZ123		28	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	
10212	5	Y3	YZ123		39	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	
10210	5	Y3	YZ123		37	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	
10208	4	Y	YZ12		21	XXXXXXXXXXXXXXXXXXXX	
10206	3	Y	YZ1		15	XXXXXXXXXXXX	
10204	3	Y	YZ1		10	XXXXXXXXXX	
10202	2	Y	YZ		7	XXXXXXX	
10200	1	Y	Y		3	XXX	
10130	1	Y	Y		2	XX	

Preparation for Trading, July 23

For the market of July 23, we will hold our position with a stop at 10222.

Accumulation/Distribution by Period

The half-hour periods are yzABCDEFGHJKLM. The first period is 10 minutes; the rest are 30.

The market was balancing (accumulating) for four half-hour periods from A to D. The accumulation price region was 10214–10210.

An up distribution began in period D, where the bracket envelope was 10214 and the high was 10222. Next period high was 10223.

The market was balancing (accumulating) for four half-hour periods from F to I. The accumulation price region was 10223–10219.

An up distribution began in period I, where the bracket envelope was 10223 and the high was 10229. Next period high was 10230.

The market was balancing (accumulating) for two half-hour periods from K to L. The accumulation price region was 10230–10227.

NOTE: The accumulation envelope was tilting upward. Thus there was upward distribution during the “accumulation” phase.

Figure 6-5. Commercial activity analysis for September 1992 T-bonds, July 22, 1992

CT12 STUDY FOR: U2 09 92

DATE	HIGH	LOW	CLOSE	CTI	VOL/PRICE TIC			VALUE AREA				QUADRANT	
					V-AB	V-VA	V-BL	%TOT	%ABV	%VA	%BLO	%QD1	%QD4
07 22 92	10302	10210	10301	2	73	100	0	15.2	2.9	12.4	0.0	18.8	23.7
07 21 92	10219	10208	10214	2	15	100	8	15.1	2.4	12.0	0.7	3.3	4.9
07 20 92	10216	10204	10214	2	19	100	23	15.9	1.4	11.8	2.8	8.7	6.9
07 17 92	10223	10201	10203	2	43	100	25	16.3	3.2	11.7	1.4	16.5	8.4
07 16 92	10231	10129	10226	2	65	100	20	17.6	4.3	13.1	0.2	18.9	27.5
07 15 92	10220	10200	10217	2	35	100	12	16.7	4.4	12.2	0.2	16.3	43.3
07 14 92	10203	10125	10131	2	25	100	44	17.9	1.9	12.6	3.4	10.8	7.3
07 13 92	10206	10129	10200	2	10	100	11	16.7	1.5	14.4	0.8	1.7	18.7
07 10 92	10308	10208	10211	2	68	100	15	16.7	4.0	12.2	0.5	17.0	14.1
07 09 92	10224	10213	10223	2	42	100	35	17.3	3.5	12.3	1.5	13.7	25.0
AVERAGE				2	39	100	19	16.6	2.9	12.5	1.1	12.6	18.0

Commercial Activity Review (10 days max.). Significant action is:

VOL/PRICE TIC: Values of 70 or more.

VALUE AREA: Fifty percent greater than the average.

QUADRANT: Fifty percent greater than the average.

07 22 Upper Comm Action: 10302 VOL/PRICE

07 20 Lower Comm Action: 10204

VALUE AREA

07 16 Upper Comm Action: 10231

QUADRANT

Lower Comm Action: 10129

QUADRANT

07 15 Lower Comm Action: 10200

QUADRANT

07 14 Lower Comm Action: 10125

VALUE AREA

Figure 6-6. Public activity analysis for September 1992 T-bonds, July 22, 1992

CT14 STUDY FOR: U2 09 92

DATE	HIGH	LOW	CLOSE	CTI	VOL/PRICE TIC			VALUE AREA				QUADRANT	
					V-AB	V-VA	V-BL	%TOT	%ABV	%VA	%BLO	%QD1	%QD4
07 22 92	10302	10210	10301	4	95	100	0	27.1	6.3	20.8	0.0	23.2	24.9
07 21 92	10219	10208	10214	4	15	100	8	24.9	3.8	19.9	1.2	5.3	5.0
07 20 92	10216	10204	10214	4	16	100	22	25.2	1.9	19.0	4.3	7.6	9.7
07 17 92	10223	10201	10203	4	37	100	30	26.1	4.6	18.9	2.6	14.8	10.0
07 16 92	10231	10129	10226	4	79	100	29	24.8	6.9	17.4	0.5	22.4	25.1
07 15 92	10220	10200	10217	4	33	100	24	23.5	5.8	17.2	0.4	14.8	41.5
07 14 92	10203	10125	10131	4	21	100	48	22.9	2.1	16.2	4.7	9.0	7.4
07 13 92	10206	10129	10200	4	23	100	20	23.9	4.2	17.9	1.8	9.0	21.2
07 10 92	10308	10208	10211	4	69	100	27	27.5	6.5	19.6	1.4	17.8	19.7
07 09 92	10224	10213	10223	4	51	100	25	24.5	5.9	17.2	1.5	15.8	21.5
AVERAGE				4	43	100	23	25.0	4.8	18.4	1.8	14.0	18.6

Figure 6-7. Day Review for September 1992 T-bonds, July 22, 1992

MARKET REVIEW T-BOND (CBOT) DAY			
U2 09 92			
	CURRENT DAY 07 22 92		PREVIOUS 07 21 92
OPEN	10216		10215
HIGH	10302		10219
LOW	10210		10208
CLOSE	10301		10214
HIGH VAL PRICE (POC)	10222		10213
VALUE AREA	10224 -	10210	10214 - 10211
TPO's, TOTAL	80		69
TPO's, ABOVE POC	23		21
TPO's, BELOW POC	46		28
TRADE FACILITATION FACTOR	3.20		5.75
SHAPE FACTOR	15.00		3.33
ATTEMPTED DIR	U, D or blank		D
VALUE AREA DIR	H, A, Z or L or b1		

Commentary on market direction:

Today's Point of Control is higher.

Today's attempted direction is unclear. Yesterdays was down.

The Value Area direction is no change.

Shape-Distribution: Minimum Distrib = 4 Prices, 1 TPO.

There is/are 3 Distribution(s) on this day.

DIST#	HIGH	POC	LOW	POC-TPOs
1	10230	10229	10226	4
2	10223	10222	10219	6
3	10217	10214	10210	5

Trading on July 23

The market opened about steady, dropping as low as 10227 during the first 10 minutes of trading (y period, 7:20 to 7:30; see Figure 6-11). For the rest of the day price was up, closing at 10320 (Figure 6-9).

Preparation for Trading on July 24

Two nodes have formed at 10318 and 10326 (Figure 6-9). Since both developed the same day, and they are close to each other, they may be just one node that will fill out on the 24th. The close at 10320 is on the upper edge of the lower node. There is not yet a "former" node, so the stop for the 24 is still 10227 (Rule 5).

Figure 6-8. Half-hour auctions for September 1992 T-bonds, July 22, 1992**HALF-HOUR AUCTIONS FOR JULY 22.**

	y	z	A	B	C	D	E	F	G	H	I	J	K	L	M
10302														9	
10301														43	2
10300														47	2
10231														37	
10230												1	3	33	
10229											2	31	12	9	
10228											21	47	23		
10227											31	19	13		
10226											12	2			
10225											2				
10224											2				
10223							9	5	14		7				
10222						17	40	10	23	6	11				
10221						35	68	29	20	25	6				
10220						36	46	31	10	21	1				
10219						25	9	7		2					
10218						16									
10217	2					6	25								
10216	7					11	25								
10215	9					8	10								
10214	13	7	4			8	1								
10213	15	29	16			14									
10212	5	38	26	10	12										
10211		20	14	24	3										
10210		4	1	14											

Accumulation/Distribution by Period

The half-hour periods are yzABCDEFGHJKLM. The first period is 10 minutes; the rest are 30.

The market was balancing (accumulating) for two half-hour periods from A to B. The accumulation price region was 10307–10303.

NOTE: The accumulation envelope was tilting upward. Thus there was upward distribution during the “accumulation” phase.

An up distribution began in period B, where the bracket envelope was 10307 and the high was 10320. Next period high was 10321.

The market was balancing (accumulating) for three half-hour periods from D to F. The accumulation price region was 10321–10316.

NOTE: The accumulation envelope was tilting upward. Thus there was upward distribution during the “accumulation” phase.

Figure 6-9. TPO Overlay for September 1992 T-bonds, July 23, 1992

5 DAY TPO OVERLAY AND PRICE ROTATION PROFILE
 SEP 92 T-BOND (CBOT) DAY 07 17 92 TO 07 23 92

PRICE	DYS	L/F	ROT	PROFILE *	TPOS	TPO VOL	OVERLAY *
10330	1	4	4		1	X	
10328	1	4	4		6	XXXXXX	
10326	1	4	4		6	XXXXXX	<Node
10324	1	4	4		5	XXXXX	
10322	1	4	4		2	XX	
10320	1	4	4		3	XXX	<Close
10318	1	4	4		5	XXXXX	<Node
10316	1	4	4		3	XXX	
10314	1	4	4		1	X	
10312	1	4	4		1	X	
10310	1	4	4		1	X	
10308	1	4	4		2	XX	
10306	1	4	4		3	XXX	
10304	1	4	4		3	XXX	
10302	2	4	34		3	XXX	
10300	2	4	34		3	XXX	
10298	2	4	34		3	XXX	
10228	2	4	34		5	XXXXX	
10226	1		3		2	XX	
10224	1		3		1	X	
10222	2	Z	Z3		8	XXXXXXXXX	
10220	2	Z	Z3		10	XXXXXXXXXX	
10218	3	Z	Z23		6	XXXXXX	
10216	4	Z	Z123		12	XXXXXXXXXXXX	
10214	4	Z	Z123		26	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	
10212	4	Z	Z123		35	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	
10210	4	Z	Z123		31	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	
10208	3	Z	Z12		15	XXXXXXXXXXXX	
10206	2	Z	Z1		8	XXXXXXX	
10204	2	Z	Z1		4	XXXX	
10202	1	Z	Z		2	XX	

An up distribution began in period F, where the bracket envelope was 10321 and the high was 10327. Next period high was 10328.

The market was balancing (accumulating) for five half-hour periods from H to L. The accumulation price region was 10328–10324.

Trading for July 24

The open at 10327 (see Figure 6-13) was up from yesterday's close of 10320, but the strength soon waned and the day was spent node building.

Figure 6-10. Day Review for September 1992 T-bonds, July 23, 1992

MARKET REVIEW T-BOND (CBOT) DAY				
U2 09 92				
	CURRENT DAY 07 23 92		PREVIOUS 07 22 92	
OPEN	10300		10216	
HIGH	10331		10302	
LOW	10227		10210	
CLOSE	10331		10301	
HIGH VAL PRICE (POC)	10325		10222	
VALUE AREA	10331 - 10313		10224 - 10210	
TPO's, TOTAL	98		80	
TPO's, ABOVE POC	23		23	
TPO's, BELOW POC	54		46	
TRADE FACILITATION FACTOR	2.65		3.20	
SHAPE FACTOR	11.00		15.00	
ATTEMPTED DIR U, D or blank	U			
VALUE AREA DIR H, A, Z or L or bl	H			

Commentary on market direction:

Today's Point of Control is higher.

Today's attempted direction is up. Yesterday's was unclear.

The Value Area direction is higher.

Shape-Distribution: Minimum Distrib = 4 Prices, 1 TPO.

There is/are 2 Distribution(s) on this day.

DIST# HIGH POC LOW POC-TPOs

1 10330 10327 10316 7

2 10308 10307 10301 3

The two nodes of July 23 closed up to form a single one. The day's close, 10320 matched yesterday.

Preparation for Trading on July 27

The Overlay of Figure 6-12 shows a single node centered at 10324. According to Rule 5, the stop remains at 10223. Open trade equity is 29/32, or about \$900. In this example, the rules are followed. Many traders, however, would want to close up the stop. The "I'm no fool" theory tells us to not let the market make a fool of us. Do not let a winning trade turn into a loser. On that basis, the stop should be moved up at least to the trade entry, 10227, or a little higher to pay for commissions. Another idea is to use the Overlay of Figure 6-12 to treat the current node as a bracket (which it is to a limited degree) and set a stop at the downside breakout (10314). That would give a profit of 19 points (\$590).

Figure 6-12. TPO Overlay for September 1992 T-bonds, July 24, 1992

5 DAY TPO OVERLAY AND PRICE ROTATION PROFILE
 SEP 92 T-BOND (CBOT) DAY 07 20 92 TO 07 24 92

PRICE	DYS	L/F	ROT	PROFILE *	TPOS	TPO VOL	OVERLAY *
10330	1		4		1	X	
10328	2	5	45		9	XXXXXXXXXX	
10326	2	5	45		13	XXXXXXXXXXXXXX	
10324	2	5	45		16	XXXXXXXXXXXXXXXXXX	< Node
10322	2	5	45		12	XXXXXXXXXXXXXX	
10320	2	5	45		10	XXXXXXXXXXXXXX	< Close
10318	2	5	45		9	XXXXXXXXXX	
10316	2	5	45		5	XXXXX	
10314	2	5	45		2	XX	
10312	1		4		1	X	
10310	1		4		1	X	
10308	1		4		2	XX	
10306	1		4		3	XXX	
10304	1		4		3	XXX	
10302	2		34		3	XXX	
10300	2		34		3	XXX	
10298	2		34		3	XXX	
10296	2		34		5	XXXXX	
10294	1		3		2	XX	
10292	1		3		1	X	
10290	1		3		5	XXXXX	
10288	1		3		6	XXXXXX	
10286	2		23		2	XX	
10284	3	1	123		7	XXXXXXX	
10282	3	1	123		22	XXXXXXXXXXXXXXXXXXXXXX	
10280	3	1	123		30	XXXXXXXXXXXXXXXXXXXXXXXXXX	
10278	3	1	123		23	XXXXXXXXXXXXXXXXXXXXXXXXXX	
10276	2	1	12		7	XXXXXXX	
10274	1	1	1		3	XXX	
10272	1	1	1		1	X	

Accumulation/Distribution by Period

The half-hour periods are yzABCDEFGHIJKLM. The first period is 10 minutes; the rest are 30.

The market was balancing (accumulating) for 12 half-hour periods from A to L. The accumulation price region was 10327–10317.

Figure 6-13. Day Review for September 1992 T-bonds, July 24, 1992

MARKET REVIEW T-BOND (CBOT) DAY			
U2 09 92			
	CURRENT DAY 07 24 92	PREVIOUS 07 23 92	
OPEN	10327	10300	
HIGH	10329	10331	
LOW	10313	10227	
CLOSE	10320	10331	
HIGH VAL PRICE (POC)	10323	10325	
VALUE AREA	10326 - 10320	10331 - 10313	
TPD's, TOTAL	98	98	
TPD's, ABOVE POC	35	23	
TPD's, BELOW POC	45	54	
TRADE FACILITATION FACTOR	5.76	2.65	
SHAPE FACTOR	4.41	11.00	
ATTEMPTED DIR U, D or blank	D	U	
VALUE AREA DIR H, A, Z or L or bl			

Commentary on market direction:

Today's Point of Control is lower.

Today's attempted direction is down. Yesterday's was up.

The Value Area direction is no change.

Shape-Distribution: Minimum Distrib = 4 Prices, 1 TPO.

There is/are 1 Distribution(s) on this day.

DIST#	HIGH	POC	LOW	POC-TPDs
1	10328	10323	10316	14

Trading for July 27

The open at 10331 (see Figure 6-16) was up from yesterday's close of 10320, but price weakened the next two hours, moving as low as 10322. Price never fell below the node. An up move later in the day settled at 10404.

Preparation for Trading on July 28

A second node is taking shape at 10406. According to Rule 6, the stop for the 28th is the midpoint of node 1, or about 10322. That is the stop for July 28.

Accumulation/Distribution by Period

The half-hour periods are yzABCDEFGHIJKLM. The first period is 10 minutes; the rest are 30.

Figure 6-14. Half-hour auctions for September 1992 T-bonds, July 24, 1992

HALF-HOUR AUCTIONS FOR THE DAY.

	y	z	A	B	C	D	E	F	G	H	I	J	K	L	M
10329					6										
10328		9			11							3	3		
10327		20			17						3	11	13		
10326		24			32	15				13	13	18	16		
10325		14	1		35	17				22	18	17	8		
10324		2	23		24	20		7	5	11	17	8	5	7	
10323		1	71	5	6	16	30	4	10	21	3	9	2	15	18
10322		1	73	12	17	7	13	32	11	32	7	1		17	37
10321		2	25	13	18	1		49	17	16	6			6	38 1
10320		2	1	8	11			27	9					12	
10319		6		9	11			8							
10318		6		28	14			1							
10317		1		35	11										
10316				15	8										
10315					21										
10314					18										
10313					1										

The market was balancing (accumulating) for five half-hour periods from B to F. The accumulation price region was 10329-10324.

NOTE: The accumulation envelope was tilting upward. Thus there was upward distribution during the "accumulation" phase.

An up distribution began in period F, where the bracket envelope was 10329 and the high was 10401. Next period high was 10408.

The market was balancing (accumulating) for four half-hour periods from I to L. The accumulation price region was 10408-10404.

Trading on July 28

The open at 10410 (see Figure 6-19) is a gap up from yesterday's close of 10404, and the market closed near the high at 10505. Most of the last six periods of the day were spent accumulating, i.e., in a trading range.

Preparation for Trading on July 29

A third node is taking shape at 10508 (see Figure 6-18). According to Rule 6, the stop for the 29th is the midpoint of node 2, or about 10406. That is the stop for July 29.

Accumulation/Distribution by Period

The half-hour periods are yzABCDEFGHIJKLM. The first period is 10 minutes; the rest are 30.

The market was balancing (accumulating) for three half-hour periods from A to C. The accumulation price region was 10414–10408.

An up distribution began in period C, where the bracket envelope was 10414 and the high was 10422. Next period high was 10421.

The market was balancing (accumulating) for one half-hour period (E). The accumulation price region was 10421–10418.

An up distribution began in period E, where the bracket envelope was 10421 and the high was 10430. Next period high was 10504.

The market was balancing (accumulating) for four half-hour periods from I to L. The accumulation price region was 10511–10506.

Trading on July 29

The open at 10518 (see Figure 6-22) is a gap up from yesterday's high of 10513, and the market closed lower at 10505.

Preparation for Trading on July 30

A fourth node developed at 10522 (see Figure 6-21). But the close at 10505 lay below it, in the lower part of node 3. There is now an ambiguity in interpreting Rule 6. This close is below the midpoint of a prior node, but the latest node did not exist before today. Is the stop relevant to node 3 or node 4? What is the market telling us? Where is value?

Each node represents the market's vote for value, however transitory (value is price over time). Node 4 looked like value for as many as eleven of the fourteen periods of July 29. Then price dropped. Has price overshot value? This trend started at 10227 and reached 10600, a run in excess of \$3,000. Also, four nodes have developed, a fairly large number as trends go. Referring to the commercial trader activity does not help; as expected, there is no unusual activity there for July 29. The decision comes down to interpretation of the rules in the first place and—forgetting the test set up—how to handle this type of situation in the real world. We will interpret Rule 6 to refer to those nodes that exist after the close, i.e., the situation that must be dealt with the next day. On that basis, the close is below node 4, below the middle of node 3, and signals an exit. Since the market is closed, the exit is on the open the next day, July 30.

Figure 6-15. TPO Overlay for September 1992 T-bonds, July 27, 1992

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5 DAY      TPO OVERLAY AND PRICE ROTATION PROFILE
SEP 92 T-BOND (CBOT) DAY      07 21 92 TO 07 27 92

PRICE DYS  L/F ROT PROFILE *  TPOS TPO VOL OVERLAY *
10408 1    6    6              4 XXXX
10406 1    6    6              6 XXXXXX < Node 2
10404 1    6    6              6 XXXXXX
10402 1    6    6              3 XXX < Close
10400 1    6    6              3 XXX
10330 2    6    46             5 XXXXX
10328 3    6    456            15 XXXXXXXXXXXXXXXX
10326 3    6    456            19 XXXXXXXXXXXXXXXX
10324 3    6    456            20 XXXXXXXXXXXXXXXX < Node 1
10322 3    6    456            13 XXXXXXXXXXXX
10320 2          45            10 XXXXXXXX
10318 2          45            9 XXXXXXXX
10316 2          45            5 XXXXX
10314 2          45            2 XX
10312 1          4            1 X
10310 1          4            1 X
10308 1          4            2 XX
10306 1          4            3 XXX
10304 1          4            3 XXX
10302 2          34            3 XXX
10300 2          34            3 XXX
10290 2          34            3 XXX
10228 2          34            5 XXXXX
10226 1          3            2 XX
10224 1          3            1 X
10222 1          3            5 XXXXX
10220 1          3            6 XXXXXX
10218 2    2    23            2 XX
10216 2    2    23            6 XXXXXX
10214 2    2    23            16 XXXXXXXXXXXXXXXX
10212 2    2    23            19 XXXXXXXXXXXXXXXX
10210 2    2    23            9 XXXXXXXX
10208 1    2    2            1 X

```

Figure 6-16. Day Review for September 1992 T-bonds, July 27, 1992

MARKET REVIEW T-BOND (CBOT) DAY			
	U2 09 92		
	CURRENT DAY 07 27 92	PREVIOUS 07 24 92	
OPEN	10331	10327	
HIGH	10409	10329	
LOW	10322	10313	
CLOSE	10404	10320	
HIGH VAL PRICE (POC)	10404	10323	
VALUE AREA	10409 - 10328	10326 - 10320	
TPO's, TOTAL	80	98	
TPO's, ABOVE POC	22	35	
TPO's, BELOW POC	50	45	
TRADE FACILITATION FACTOR	4.00	5.76	
SHAPE FACTOR	15.00	4.41	
ATTEMPTED DIR U, D or blank		D	
VALUE AREA DIR H, A, Z or L or b) H			

Commentary on market direction:

Today's Point of Control is higher.

Today's attempted direction is unclear. Yesterdays was down.

The Value Area direction is higher.

Shape-Distribution: Minimum Distrib = 4 Prices, 1 TPO.

There is/are 1 Distribution(s) on this day.

DIST# HIGH POC LOW POC-TPOs

1 10409 10404 10323 7

Figure 6-17. Half-hour auctions for September 1992 T-bonds, July 27, 1992

[illegible]

Figure 6-18. TPO Overlay for September 1992 T-bonds, July 28, 1992

5 DAY TPO OVERLAY AND PRICE ROTATION PROFILE
 SEP 92 T-BOND (CBOT) DAY 07 22 92 TO 07 28 92

PRICE	DYS	L/F	ROT	PROFILE *	TPOS	TPO VOL	OVERLAY *
10512	1	7	7		1	X	
10510	1	7	7		4	XXXX	
10508	1	7	7		5	XXXXX < Node 3	
10506	1	7	7		7	XXXXXXX	
10504	1	7	7		2	XX	
10502	1	7	7		1	X	
10500	1	7	7		2	XX	
10430	1	7	7		2	XX	
10428	1	7	7		1	X	
10426	1	7	7		2	XX	
10424	1	7	7		1	X	
10422	1	7	7		2	XX	
10420	1	7	7		3	XXX	
10418	1	7	7		3	XXX	
10416	1	7	7		2	XX	
10414	1	7	7		3	XXX	
10412	1	7	7		4	XXXX	
10410	1	7	7		4	XXXX	
10408	2	7	67		8	XXXXXXXX	
10406	2	7	67		7	XXXXXXX < Node 2	
10404	1		6		6	XXXXXX	
10402	1		6		3	XXX	
10400	1		6		3	XXX	
10330	2		46		5	XXXXX	
10328	3		456		15	XXXXXXXXXXXXXXXXXX	
10326	3		456		19	XXXXXXXXXXXXXXXXXXXX	
10324	3		456		20	XXXXXXXXXXXXXXXXXXXX < Node 1	
10322	3		456		13	XXXXXXXXXXXXXXXXXX	
10320	2		45		10	XXXXXXXXXX	
10318	2		45		9	XXXXXXXXXX	
10316	2		45		5	XXXXX	
10314	2		45		2	XX	
10312	1		4		1	X	
10310	1		4		1	X	
10308	1		4		2	XX	
10306	1		4		3	XXX	
10304	1		4		3	XXX	
10302	2	3	34		3	XXX	

10300	2	3	34	3 XXX
10230	2	3	34	3 XXX
10228	2	3	34	5 XXXXX
10226	1	3	3	2 XX
10224	1	3	3	1 X
10222	1	3	3	5 XXXXX
10220	1	3	3	6 XXXXXX
10218	1	3	3	1 X
10216	1	3	3	2 XX
10214	1	3	3	4 XXXX
10212	1	3	3	5 XXXXX
10210	1	3	3	4 XXXX

Figure 6-19. Day Review for September 1992 T-bonds, July 28, 1992

MARKET REVIEW T-BOND (CBOT) DAY
U2 09 92

	CURRENT DAY 07 28 92	PREVIOUS 07 27 92
OPEN	10410	10331
HIGH	10513	10469
LOW	10406	10322
CLOSE	10505	10404
HIGH VAL PRICE (POC)	10506	10404
VALUE AREA	10513 - 10417	10409 - 10328
TPD's, TOTAL	115	80
TPD's, ABOVE POC	30	22
TPD's, BELOW POC	72	50
TRADE FACILITATION FACTOR	2.88	4.00
SHAPE FACTOR	18.13	15.00
ATTEMPTED DIR U, D or blank	U	
VALUE AREA DIR H, A, Z or L or bl	H	

Commentary on market direction:

Todays Point of Control is higher.

Todays attempted direction is up.

Yesterdays was unclear.

The Value Area direction is higher.

Shape-Distribution: Minimum Distrib = 4 Prices, 1 TPO.

There is/are 2 Distribution(s) on this day.

DIST# HIGH POC LOW POC-TPDs

1 10512 10510 10500 6

2 10422 10413 10408 5

Practically, the decision to exit because of trading in the prior node is just fine, but what about a scenario in which the open on July 30 is within or above node 4? Obviously, the trader's decision could go either way. A strong opening can imply increased value and possibly the market has further to go. Or a strong opening may be an opportunity to exit at a better position. Too often the decision to stay is rooted more in love for a winning trade than in hard-headed market analysis. On a strong opening, we would opt to move the stop up to within about an octant (from the bracket) and await further developments.

Accumulation/Distribution by Period

The half-hour periods are yzABCDEFGHJKLM. The first period is 10 minutes; the rest are 30.

The market was balancing (accumulating) for 11 half-hour periods from A to K. The accumulation price region was 10527–10516.

A down distribution began in period K, where the bracket envelope was 10516 and the low was 10506. Next period low was 10430.

Trading on July 30

The open at 10426 is the exit for the trade. This trend carried from 10227 to 10426, a gain of nearly \$2,000.

What if the trade had been kept through the day? The market continued to trade below node 3. After the close, the 5-day Overlay was found to have formed a bracket. So the trader is ready to trade again.

Responsive/Breakout Trading: An Example

Every trade starts as a day trade. The position/breakout trader, looking to the long term, does not intend to be day-trading. But the position trade that goes wrong fast and gets stopped out is a day trade. Responsive trading is often completed within the day, maybe by definition. That is, many responsive traders are not willing to hold a position overnight. So the responsive day trader and the breakout position trader are in the same boat. They both need to know value before initiating a trade. The day trader wants to trade when price is away from value but the market condition remains bracketing; the position trader seeks to enter when the market condition is changing to trend. Here lies the germ of a very simple trading model, one that illustrates Value Based Power Trading for both day and position traders.

HALF-HOUR AUCTIONS FOR THE DAY.

[illegible]

Figure 6-21. TPO Overlay for September 1992 T-bonds, July 29, 1992

PRICE	DYS	L/F	ROT	PROFILE *	TPOS	TPO VOL	OVERLAY *
10600	1	8	8		1	X	
10530	1	8	8		1	X	
10528	1	8	8		1	X	
10526	1	8	8		3	XXX	
10524	1	8	8		7	XXXXXXX	
10522	1	8	8		11	XXXXXXXXXX	< Node 4
10520	1	8	8		9	XXXXXXXXXX	
10518	1	8	8		8	XXXXXXXXXX	
10516	1	8	8		5	XXXXX	
10514	1	8	8		3	XXX	
10512	2	8	78		3	XXX	
10510	2	8	78		6	XXXXXX	
10508	2	8	78		7	XXXXXXX	
10506	2	8	78		10	XXXXXXXXXX	< Node 3
10504	2	8	78		4	XXXX	< Close
10502	2	8	78		3	XXX	
10500	2	8	78		4	XXXX	
10430	2	8	78		3	XXX	
10428	1		7		1	X	
10426	1		7		2	XX	
10424	1		7		1	X	
10422	1		7		2	XX	
10420	1		7		3	XXX	
10418	1		7		3	XXX	
10416	1		7		2	XX	
10414	1		7		3	XXX	
10412	1		7		4	XXXX	
10410	1		7		4	XXXX	
10408	2		67		8	XXXXXXXX	< Node 2
10406	2		67		7	XXXXXXX	
10404	1		6		6	XXXXXX	
10402	1		6		3	XXX	
10400	1		6		3	XXX	
10330	2	4	46		5	XXXXX	
10328	3	4	456		15	XXXXXXXXXXXXXXX	
10326	3	4	456		19	XXXXXXXXXXXXXXXXXX	
10324	3	4	456		20	XXXXXXXXXXXXXXXXXXXX	< Node 1
10322	3	4	456		13	XXXXXXXXXXXXXX	
10320	2	4	45		10	XXXXXXXXXX	
10318	2	4	45		9	XXXXXXXXXX	
10316	2	4	45		5	XXXXX	
10314	2	4	45		2	XX	
10312	1	4	4		1	X	
10310	1	4	4		1	X	
10308	1	4	4		2	XX	
10306	1	4	4		3	XXX	
10304	1	4	4		3	XXX	

10302	1	4	4	1 X
10300	1	4	4	1 X
10230	1	4	4	1 X
10228	1	4	4	1 X

Figure 6-22. Day Review for September 1992 T-bonds, July 29, 1992

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MARKET REVIEW T-BOND (CBOT) DAY
U2 09 92
CURRENT DAY 07 29 92    PREVIOUS 07 28 92
OPEN                    10518                10410
HIGH                    10600                10513
LOW                     10430                10406
CLOSE                   10505                10505
HIGH VAL PRICE (POC)    10521                10506
VALUE AREA              10526 - 10515        10513 - 10417
TPO's, TOTAL            124                  115
TPO's, ABOVE POC        47                   30
TPO's, BELOW POC        55                   72
TRADE FACILITATION FACTOR 3.54                2.88
SHAPE FACTOR            4.68                 18.13
ATTEMPTED DIR U, D or blank
VALUE AREA DIR H, A, Z or L or bl H

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Commentary on market direction:

Today's Point of Control is higher.

Today's attempted direction is unclear. Yesterday's was up.

The Value Area direction is higher.

Shape-Distribution: Minimum Distrib = 4 Prices, 1 TPO.

There is/are 1 Distribution(s) on this day.

DIST# HIGH POC LOW POC-TPOs

1 10600 10522 10513 11

The Overlay Demand Curve in a bracket condition plays a large role in this model, as do the octants and limits of the distribution. See Figure 6-24.

The distribution has an area of 115 x's between the limits, locating the value area between 96 and 88.

Figure 6-24. Theoretical bracket distribution with limits at 100 and 84, octants at 98 and 86, and middle at 92

```

102 x
101 xx
100 xxx < Upper Bracket Limit: Breakout Point
99 xxxx
98 xxxxx < Octant: Responsive Trade Point
97 xxxxxx
96 xxxxxxx
95 xxxxxxxx
94 xxxxxxxx
93 xxxxxxxx
92 xxxxxxxxxxx < Middle of Distribution: Responsive Target
91 xxxxxxxxxxx
90 xxxxxxxxxxx
89 xxxxxxxx
88 xxxxxxx
87 xxxxxx
86 xxxxx < Octant: Responsive Trade Point
85 xxxx
84 xxx < Lower Bracket Limit: Breakout Point
83 xx
82 x

```

Trading Rules: Responsive/Breakout

1. The market must be in a bracket.

Responsive/Day Trades

2. An alert for a responsive long is triggered when price falls below the lower octant (between the lower bracket limit and one octant up). The long is placed when price then crosses above the octant.
3. An alert for a responsive short is triggered when price rises above the upper octant (between the upper bracket limit and one octant down). The short is placed when price then crosses below the octant.
4. The target price for a responsive trade is the middle of the bracket. The stop-loss price for a responsive trade is the bracket limit.
5. Responsive trades not stopped out are liquidated at the close.

Breakout/Position Trades

1. An alert for a breakout long is triggered when price rises above the upper octant (between the upper bracket limit and the upper octant). The long is placed when price moves above the bracket.
2. An alert for a breakout short is triggered when price falls below the lower octant (between the lower bracket limit and the lower octant). The short is placed when price moves below the bracket.
3. There is no target price at the beginning of a trend. The stop-loss price for a trend trade is one octant from entry.
4. Breakout trades not stopped out for a loss are liquidated on the close.

Application of these rules result in all trades being closed no later than end of day. Responsive and breakout trades are simultaneously alerted when price enters the region between the octant and the nearest limit. Each region contains 12 x's, or approximately 10 percent of recorded trading. Assuming the market remains in a bracket, price should visit the upper alert region 10 percent of the time; the same for the lower alert region. With the distribution of Figure 6-24, and the rules above, the responsive day trader would have a trading opportunity 20 percent of the time, or about every five days. If the distribution were flatter, there would be more trading opportunities; if more peaked, less.

When the value is perceived to be changing, price continues to move through the alert area and on to breakout. If the market always moved in a straight line, each breakout would signal the start of a trend and there would be no need for a protective stop. But there is price fluctuation and some breakouts just represent bracket widening, with a speedy price return back into the bracket. We have seen that the LDB (especially the hourlies) can throw some light on the market's intentions. That type of data is not available for the trading below.

Trading 24 Markets 45 Days

Prior to the open each day, all futures are canvassed to find those bracketing at the 5-day Overlay level. This is done with the Bracket Screen (Figure 6-25). The test period covers 45 days from March 11 through May 29, 1992.

Table 6-1. Markets to be canvassed

The markets:	Wheat	Soybeans	Soybean Oil	Soybean Meal
	Corn	Coffee	Crude Oil	Unleaded Gas
	Sugar	Cocoa	Copper	Heating Oil
	Gold	Sw. Franc	J. Yen	Br. Pound
	D. Mark	Hogs	L. Cattle	Bellies
	S & P	Nyfe Index	T-bonds	T-notes.
	COTTON			

Figure 6-25. Theoretical track record: 5-day Overlays, March 11 through May 29, 1992, with no commissions, no slip assumed

Track Record: Both Responsive & Break-Out Trading
March 11, 1992 - May 29, 1992

DATE		TD	GAIN	LOSS
311	X WHEAT	RS	175	
311	X SOY MEAL	BD		5
311	CRUDE	RL		30
312	X WHEAT	BD	175	
312	CRUDE	RL	120	
312	UNLEADED	BU	256	
316	X SOYBEANS	RL	275	
316	X SOY MEAL	RL	9	
316	COFFEE	RS	18	
316	COPPER	RL	75	
316	S FRANC	BU		88
316	S FRANC	RS		25
317	T BONDS	RL	375	
317	X SUGAR	BU		11
317	X SUGAR	RS	78	
317	X SUGAR	BD		56
317	COPPER	RS		50
317	D MARK	BU	675	
317	S FRANC	BU	900	
318	T BONDS	RS	375	
318	SOYBEANS	RS	125	
318	X SOY MEAL	BU	15	
318	COFFEE	RL	281	
318	X SUGAR	BU		23
318	X SUGAR	RS		1
318	X HOGS	BU		40
318	BELLIES	BU	68	

319		T NOTES	BU		1
319	X	SOYBEANS	BU		50
319	X	SOYBEANS	RS	175	
319	X	CORN	BD		38
319		COFFEE	BU	93	
319	X	COCOA	BD		30
319	X	COCOA	RL	80	
319	X	COCOA	BU	20	
319		HOGS	RS	160	
320	X	SOYBEANS	BU		112
320	X	SOYBEANS	RS	162	
320	X	SOYBEANS	BD	287	
320		UNLEADED	RL		84
320		UNLEADED	BD	348	
323		COFFEE	RS	168	
323	X	COCOA	BU	30	
324	X	J YEN	BD		75
324	X	J YEN	RL	212	
325		COFFEE	RL		79
325		COFFEE	BD		79
325		COFFEE	BD	795	
326	X	COCOA	RS	530	
326	X	J YEN	BU		75
326	X	J YEN	RS	237	
326	X	J YEN	RL		63
326	X	J YEN	BD	175	
327		UNLEADED	RS	180	
330	X	HEAT OIL	RL	172	
330	X	COPPER	RS	100	
331	X	HEAT OIL	RS		42
331	X	HEAT OIL	BU	92	
331	X	COPPER	RS		1
331		B POUND	BU		202
331		B POUND	RS	262	
401	X	T NOTE	RS		94
401	X	T NOTE	BU	1000	
401		B POUND	RL		163
401		B POUND	BD		163
403	X	SOYB OIL	RL	78	
403		S FRANC	BU	450	
406		SOYB OIL	RL		30
406		SOYB OIL	BD		30
407	X	L CATTLE	RL		30
407	X	L CATTLE	BD	232	
408		T BONDS	RS	375	
409		T BONDS	RL	312	

Trade Management, Monitoring, and Exit

410		COFFEE	RL		150
410		COFFEE	BD	112	
410		S FRANC	BD	412	
413		T BONDS	RS		125
413		UNLEADED	RL		235
413		UNLEADED	BD	399	
413		BELLIES	BD	201	
427		COFFEE	RL	225	
427		UNLEADED	BU		84
427	X	BELLIES	BU	140	
428		COFFEE	RS	225	
428		UNLEADED	BU	105	
428		S & P	RL	675	
429		COFFEE	RL	315	
429		S & P	BU	325	
430		T BONDS	RS	187	
430		D MARK	RS		88
430	X	HOGS	RS	208	
501		T BONDS	BU	312	
501		UNLEADED	BU	121	
501		D MARK	BU	337	
501	X	HOGS	RL	160	
504		COCOA	RS	50	
504		S & P	BU	1250	
505		T BONDS	RS		1
505	X	COCOA	BU		40
505	X	COCOA	RS	70	
505		L CATTLE	RS		40
505		HOGS	RS	100	
506		T BONDS	RS		188
506		T BONDS	BU	375	
506		COTTON	RL		100
506		COTTON	BD	550	
506	X	COCOA	RL		30
506	X	COCOA	BD	140	
506		L CATTLE	RS	30	
507	X	SUGAR	BU	56	
507	X	SUGAR	RL	134	
508		T BONDS	BU		156
508		T BONDS	RS	375	
508		T BONDS	RS		156
508		T BONDS	BU	718	
508		COFFEE	BD		225
508		S & P	RL	500	
508		S & P	BD		200
508		D MARK	BU		162
508		D MARK	RS	362	

508		D MARK	RL	237	
508		S FRANC	BD	575	
511		COFFEE	RS	18	
512	X	SUGAR	RS	11	
512		NYFE IDX	RS	425	
512		S & P	RS	750	
512		S & P	BD		250
512		J YEN	RS		125
512		J YEN	BU	1225	
513	X	COCOA	RS		10
514		NYFE IDX	BD	550	
514		HEAT OIL	RL		88
514		S & P	RL		250
514		S & P	BD	1000	
518		UNLEADED	RL		84
519	X	COPPER	RS		25
519		HOGS	BD	228	
520		COCOA	RL	50	
520		COCOA	BD	70	
521		GOLD	RL		60
521		GOLD	BD		20
522		COPPER	RS		25
528		COFFEE	BD	243	
528		COPPER	RL	25	
529		SOY MEAL	BU		10
529		COFFEE	BD		150

Legend: Column 1 is date (311 = March 11, 1992)
 X signifies low profit potential (narrow bracket)
 TD is trade direction
 BU = upside breakout (assumed out at close or stop)
 RS = responsive short day trade
 RL = responsive long day trade
 BD = downside breakout (assumed out at close or stop)
 GAIN and LOSS in \$, without commissions

Summing the trades of Figure 6-25:

	Trades	\$Gain	\$Average	%
Wins	88	25,296	287	60
Losses	58	4,847	84	40
Total	146	20,449	140	

The average gain per trade of \$140 is before commissions and slip. Commissions are easiest to figure. With 146 trades in 45 days, a rate of over three per day, commissions can be negotiated to under \$15. Slip, not getting one's exact price, comes from several factors, some exchange-dependent, some broker-dependent. The best results come from having direct access to the floor, trading through the so-called "arb" desk. Executions are quick and reported immediately, cutting down slip. A number of firms offer arb-desk services, contingent on the amount of trading. Three trades per day average will get arb-desk access from most firms.

Results

A \$140 gain per trade with 60 percent winners is a fair start for a barebones trading model. The actual return after slip and commissions would probably be in the neighborhood of \$100. Many traders (presumably all the 85 percent who are losing) would be happy to take home \$100 per round turn. For the Value Based Power Trader this should be just the start. Throughout this book we have emphasized that the trader should use the information from the value-based analyses develop his or her own model fitted to his or her own risk parameters.

By artificially limiting the time frame to one day, we have a closed system that can be unambiguously evaluated. The real-world trader would not be hampered by the restraints of the rules. Day traders in wide-ranging markets like the S&P would not let a successful trade decay into a loser just because a target was not hit. Or the breakout trader who has a profit would be loathe to stay with a trade that becomes a "false breakout." For instance, the S&P downside breakout on May 12 at one point showed a \$1,150 gain, which eroded away by the close to a \$250 loser.

This simple model does not take account of the market information, the reference points that can guide one's trades. It blindly follows the rules. We have mentioned the "I'm no fool" rule earlier in this chapter. Another rule that would be easy to add could be called the "I don't trade for nothing" rule, meaning, avoid markets with low potential. Day

Figure 6-26. Theoretical track record: 5-day Overlays, March 11 through May 29, 1992, with low-potential trades excluded

DATE		TD	GAIN	LOSS
312	UNLEADED	BU	256	
316	S FRANC	BU		88
317	D MARK	BU	675	
317	S FRANC	BU	900	
318	BELLIES	BU	68	
319	T NOTES	BU		1
319	COFFEE	BU	93	
325	COFFEE	BD		79
325	COFFEE	BD	795	
403	S FRANC	BU	450	
406	SOYB OIL	BD		30
410	COFFEE	BD	112	
410	S FRANC	BD	412	
413	BELLIES	BD	201	
428	UNLEADED	BU	105	
429	S & P	BU	325	
501	T BONDS	BU	312	
501	UNLEADED	BU	121	
501	D MARK	BU	337	
506	T BONDS	BU	375	
508	T BONDS	BU		156
508	T BONDS	BU	718	
508	S & P	BD		200
508	S FRANC	BD	575	
512	S & P	BD		250
512	J. YEN	BU	1225	
514	NYFE IDX	BD	550	
514	S & P	BD	1000	
519	HOGS	BD	228	
520	COCOA	BD	70	
528	COFFEE	BD	243	
529	SOY MEAL	BU		10
529	COFFEE	BD		150

traders, at best, can expect something less than half the range from the upper limit to the lower limit of the bracket. If a market is very quiet, it offers little to the day trader, and often to the position trader as well. Eliminating the low-potential trades from the Bracket Screen in Figure 6-25 gives Figure 6-26.

Summing the trades of Figure 6-26:

	Trades	\$Gain	\$Average	%
Wins	24	10,146	422	72
Losses	9	964	107	28
Total	33	9,182	278	

Profitability of \$278 before slip and commission is near a level considered appropriate for long-term position trades. The number of trades is low for day traders, coming out to less than one per day. But remember, the rules are stringent, and price has a low probability of getting past the octant. The day trader using these rules has a three to one reward-to-risk ratio (one-octant risk, three-octant target). One with a willingness to accept more risk could set the alert at the sextant (one-sixth of the bracket range). Sextant trading has a two to one reward-to-risk ratio (one-sextant risk, two-sextant target). Quadrant trading has a one to one reward-to-risk ratio, with a lot more trades. The trader sets the risk. This is the "power" in power trading.

Conclusion

Value Based Power Trading applied to day trading can be surprisingly active. Four trades in one day in a particular market is a little unusual, but obviously even more are possible. Applied to position trading, the Value Based approach is ideal for the hands-off trader who makes decisions outside market hours.

Once the trader understands the market, a procedure, a set of rules, can be developed that uniquely fits that trader's risk profile. The trading rules do not come from Value Based Power Trading, but rather, because of the trader's market understanding, the rules can be developed to fit the trader's own risk profile.

The Future: Some Facts, Some Guesses

Awareness of the track record of world class economists' predictions of interest rates just a few months out makes this author humble in looking into the future of market research. Nevertheless, some research is currently under way and some is contemplated.

The father of the Profile, J. Peter Steidlmayer, remains active in the field. His latest book, *New Market Discoveries* (Steidlmayer 1990), deals with the market as it is evolving into a global, twenty-four hour system. Once the evolution is accomplished, the market itself will control distribution. Right now, if you want to trade soybeans you must wait for the market to open at 9:30 A.M. The marketplace sets the trading hours and consequently plays a large role in distribution. He argues that traders will need to become more concerned with distribution and distribution development than with the marketplace format.

Pete is taking his own advice. He has developed and is marketing an on-line computer system, tied into a quote machine, that searches the market for incipient distributions. "Hot" money has grown to such a magnitude that when it comes onto the trading floor, it is harder and harder for the floor members to buffer it. This leads to jumps in price, to quick distributions. So, in theory, the market moves from accumulation to distribution much faster than before, and the distributions are then much easier to recognize.

So much for the facts. The guess is that this approach is just a beginning. The information content of the data stream will continue to be mined to the point of diminishing returns. Professor Thomas Drinka, at Western Illinois University, directs the only curriculum of futures market analysis based on the Market Profile. He and his students have been a rich source of new ideas with many publications. Dr. Drinka is the prime motivating source for "The Market Profile Society International," the professional society devoted to the furtherance of profile research. He also directs a very well-equipped futures data laboratory.

The Drinka group is currently heavily involved in developing techniques to make Profiles and the Liquidity Bank Data easier to handle. A typical LDB report with 40 price entries for one day has the same volume of data as three months of daily summary data (open, high, low, close, volume, and open interest). Just treating the large volume of data is a problem, not to speak of coupling one day to the next. Their work on simplifying the process is well under way.

Pattern recognition is a form of market analysis that is always attractive when the weight of the data makes computing difficult. Such market behavior as accumulation and distribution are geometrical concepts. Likewise, value (price over time) is arrived at by integration. The Overlay uses some elements of pattern recognition in evaluating the distributions. Profile users have been known to string days of profiles along a wall, sighting down them to get a sense of the market.

Patterns from trading volumes are used to differentiate the four types of traders (locals, commercials, off-floor members, and the public) by Robert Foree, Jr. He is finding that floor traders' signatures can show whether there is impending reversal or if the market is drifting or consolidating, etc. He finds that the commercials can show unusual patterns at the highs and lows when they are turning the market back (responsive trading), and different patterns when they are doing the normal trading in the value area. Off-floor members have a pattern similar to the floor, except their time frame is longer. Public trading has the fewest high-volume areas and do not appear to try to control the market.

Some years ago, Robert Pisani reported on essentially basic economic research in *Stocks & Commodities* (May and October 1988). In the May article, he published three "principles of market activity," one on time-volume, one on price-volume, and the last on price-time. In the October article, he discussed volume charts. That idea is getting new life—one of the programs that processes ticker data online—will now do volume charts instead of time charts.

Neural networks is the new kid on the block. The process uses a set of input data, solving for best matches. The problem lies with the input data. The old computer adage of "garbage in, garbage out" is nowhere so apt as here. To be useful, the neural network data should be independent and valid. Independence is violated if two sets of data come from the same basic source. For example, if one input is a moving average, and the other an oscillator: if the oscillator comes from a moving average sort of process (say the difference of two moving averages), it is not independent from the moving average.

Neural network programs tend to be black boxes. Ultimately, though, the output is a reference point (or points): where to get in, where to get out. Like all such procedures, the proof of the pudding comes when the method is extensively tested on new data, data not involved in setting the parameters.

CISCO has a continuing program of research. The newest avenues all involve value-based methodology. Techniques are under development to extend the continuous research time frame from one future to at least several years. Rollover from contract to contract, as it is done now, is often messy. A 20-day Overlay on the expiring contract cannot be easily converted to the new contract because the data on the new contract are not representative until rollover.

Other work on the meaning of the LDB data continues. There are so many possible routes to understanding the LDB and Market Profile that the few explored so far leave much, much more to be done. Studies of the interactions between the various classes of trader are barely under way. This interaction may illuminate the market dynamics of change. Of course, the real finds will be in the precursor events, the behavior prior to the initiation of a market condition change.

In this book we have concentrated on bracketing markets and the direct results of price movements outside the brackets. The starting point has been the bracket. Most of the time we do not have brackets to work with. If the future is anything like the recent past, markets will spend less and less time in brackets. Our research on nonbracketing markets is aimed at locating reference points that define market parameters, just as the current reference points do for bracketing markets. Adjustable time frames may be the key here. Some of our preliminary work on accumulation/distribution is reported in the Day Review part of the Trader Control Package. There is much that remains to do. Currently, the program uses half-hourly data. There is no reason that shorter time periods could not be studied. Five-minute data are currently on the system, so any multiple of five minutes can be studied. Even shorter time frames are possible. The first question is about the "best" length: is there one? How long does it take for the market to stabilize to the point where the data are meaningful? Should time be the factor or volume (as Pisani has suggested) or some other item such as price movement from a tick database?

The next few years should be exciting. It appears that the course of market research can lead us into the very basics of the economic process.

Appendix A

Glossary

Auction: Transaction process in which price is set by bidding. Provides market with organizational structure.

Balance, market: A trading range is a "balanced market."

Balance, area: Price region where most of the trading occurs.

Bracket: A market in balance, in a trading range. A nontrending market.

Bracket screen: A table of the markets currently bracketing (in a trading range). Uses 5-, 10-, 15-, and 20-day market periods.

Capping: Setting support or resistance levels, as when commercial traders enter a market responsively, thereby pushing price back toward value.

Commercial: Exchange member who trades for an institution (Cti2).

Condition: State of market; bracketing, trending, or volatile.

Continuation: Tendency for a trend or a bracket to continue its present condition.

Control price: Price of maximum trading, usually measured by TPO count.

Cti: Trader designation. Cti1 = floor, Cti2 = commercial, Cti3 = off-floor, Cti4 = public.

Day auction: The price/volume action (minor auction) taking place within one trading day.

Dispersion of volume: A measure of volume above and below the control price (typically applied to TPOs during a day, where the control is the price with maximum TPOs).

Distribution: Shape or form of the trading pattern, e.g., a bell shape of TPOs forming the Market Profile. Distribution defines market structure.

Double distribution: A market formed of two distributions, indicating a change in value over time.

Edge: A trading advantage that occurs when price is away from value.

Exhaustion: A played-out trend.

Expected behavior: That class of market activity continuing the current behavior, as expecting price within a bracket to rotate within the bracket.

Floor: Exchange "local" members (Cti1), scalpers.

Hourly Liquidity Data Bank: Cleared data during the trading day, currently available only from the Chicago Board of Trade.

Initial auction: First two TPO time periods of a market.

Initial balance: Price range of initial auction.

Liquidity Data Bank (LDB): Price, time, and volume report from clearing. Comprised of Volume Summary (volume at price, broken down into Cti1, 2, 3, 4), TPO Analysis (analysis of the TPO distribution), and Futures Summary (trading at open, high, low, and close and in the quadrants).

Major auction: Long-term trading, market condition.

Market activity: Trading. Measured by ticks, by volume, and by TPOs.

Market condition: See "Condition."

Market Profile: Graphic of the day auction. Structure of the day.

Market structure: Distribution of the TPOs (day) or Overlay (long-term).

Off-floor: Exchange member trading from off the floor (Cti3).

Opportunity: Price away from value.

Overlay Demand Curve: A graphic composed of a linear addition of TPOs or volume or ticks. "A super profile."

Public: Nonmember traders (Cti4).

Quotes: Trading price change reported from the floor (via a ticker).

Reference point: A price, volume, TPO, or other measure that identifies a significant piece of market information.

Standard deviation: Measure of a “bell” curve, ± 1 SD = 66% of trading.

Serial correlation: The linkage between two time elements, one following the other. Strong linkage has a correlation approaching unity, no linkage has zero correlation.

Time: Regulator of the market (price over time = value).

Time frames: Arbitrary periods for measurement, e.g., half-hours, days, time since last change in market condition, etc.

TPO: Time Price Opportunity. Created by a trade within a half-hour period. There cannot be more than one TPO at a given price for any half-hour.

Trade facilitation: Market liquidity. Trading activity.

Trade Facilitation Factor: Measure of liquidity; $TFF = TPOs / (Price\ Ticks)$.

Trend: Directional market movement.

Trend development: Price to value to value-area.

Value: Price over time. The most popular price (most heavily traded) in balanced (bracketing) markets.

Value area: Central 70% of volume (or TPOs), valid only in balanced markets.

Value region: Counterpart of the value area for Overlay Demand Curves.

Appendix B

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Appendix C

Sources of Data, Vendors

Futures Magazine, April 1993, listed the end-of-day data vendors. This group offers both current and historical "exchange official" data.

Standard data: Open, high, low, close, volume, and open interest.

CISCO	800-800-7227
Commodity Systems Inc.	800-274-4727
Genesis Financial Data Services	719-260-6111
Glance Market Data Inc.	604-984-6222
Knight Ridder Financial Publishing	800-621-5271
MJK Associates	408-456-5000
National Computer Network	800-942-6262
Prophet Software	800-772-8040
Reuters America	212-912-7223
Technical Tools	800-231-8005
Tick Data Inc.	800-822-8425
Track Data Corp.	718-522-6886

Standard data: Tick by tick.

CISCO	800-800-7227
Technical Tools	800-231-8005
Tick Data Inc.	800-822-8425

Nonstandard Data: Market Profile.

CISCO	800-800-7227
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Nonstandard Data: Liquidity Data Bank.

Chicago Board of Trade (Microfiche)	800-288-CBOT
CISCO	800-800-7227

Appendix D

Futures Symbols for CISCO

Symbols are sorted alphabetically on the CISCO universal group, columns 29-30.

Legend

- Line 1. Months. The 0s below the months identifier and opposite the futures indicate delivery months.
- Line 3. Front year ticker month identifiers.
- Line 4. Back year (red) ticker month identifiers.
- Line 6 to end. Ticker symbols and futures trading information.
 - Column 1-2. Ticker (Bridge) symbols.
 - Column 3-5. Obsolete.
 - Column 7-28. Commodity name.
 - Column 29-30. CISCO universal symbols.
 - Column 31-32. Obsolete.
 - Column 34-36. Exchange defined symbols.
 - Column 38-39. CISCO daily summary symbols.
 - Column 41. Obsolete.
 - Column 42-75. Delivery months.
 - Column 76-87. Base conversion factor.
 - Column 88-89. Number of half-hour TPO periods.
 - Column 91-116. TPO period identifiers.
 - Column 117-125. Trading hours, Chicago local time.
 - Column 127-130. Trading fraction.

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J F M A M J J A S O N D
=====
F G H J K M N O U V X Z
D E I L O P T R B C W Y
=====
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G	10	1000 OZ. SILVER (CBOT)	AG	3	AG	CR	1	0	0	0	0	0	0	0	0.10	13	yzABCDEFGHIJK	720-1325	10
BP	2	56BR POUND (CME:IMM)	BP	2	BP	IB	1	0	0	0	0	0	0	0	0.02	14	yzABCDEFGHIJKL	0720-1400	100
BO	1	SOYBEAN OIL (CBOT)	BO	8	BO	CL	10	0	0	0	0	0	0	0	0.01	8	DEFGHIJK	0830-1315	100
BR	10s	MAXI MMI INDEX (CBOT)	BC	3	BC	CZ	20	0	0	0	0	0	0	0	0.05	15	ABCDEFGHIJKLMNP	0815-1515	100
CA	1	US \$ INDEX (CBOT)	CA	2	IX	CA	1	0	0	0	0	0	0	0	0.01	15	yzABCDEFGHIJKLM	0720-1415	100
CR	1	T. BOND 3&4 (CBOT)	CR	0	US	CT	1	0	0	0	0	0	0	0	0.03125	15	yzABCDEFGHIJKLM	0720-1405	32
CP	5s	COPPER (CEC-COMEX)	CP	4	EC	10	0	0	0	0	0	0	0	0	0.05	10	ABCDEFGHIJ	0825-1300	100
C	2	CORN (CBOT)	C	5	C	CC	1	0	0	0	0	0	0	0	0.25000	8	DEFGHIJK	0930-1315	8
CL	1	CRUDE OIL (CEC-NYM)	CL	7		YE	10	0	0	0	0	0	0	0	0.01	12	BCDEFGHIJKLM	0845-1410	100
CO	1	COCOA (CEC-CSCE)	CO	3		SK	1	0	0	0	0	0	0	0	0.01	10	BCDEFGHIJK	0830-1315	100
CC	5	COFFEE "C" (CEC-CSCE)	CC	3		SE	1	0	0	0	0	0	0	0	0.10	11	ABCDEFGHIJK	0815-1328	100
CD	1	C DOLLAR (CME:IMM)	CD	2	CD	IC	1	0	0	0	0	0	0	0	0.01	14	yzABCDEFGHIJKL	0720-1400	100
DM	1	D MARK (CME:IMM)	DM	2	DM	IM	1	0	0	0	0	0	0	0	0.01	14	yzABCDEFGHIJKL	0720-1400	100
E	1	LIBOR (IMM)	EM	5	EM	IL	10	0	0	0	0	0	0	0	0.01	14	yzABCDEFGHIJKL	0720-1400	100

TY 1 30 DAY INTST (CBOT)	FF 2	.FF	CI	10	0	0	0	0	0	0	0	0	0	0	0	0.01	14	zABCEFGHJUKL	0720-1400	1000
TN 1 5 YR NOTE (CBOT) DAY	F2 4	.F2	CS	1	0	0	0	0	0	0	0	0	0	0	0	0.015625	15	yzABCEFGHJUKLM	0720-1405	6
FC 2+FEEDER CATTLE (CME)	FC 4	FC	MF	10	0	0	0	0	0	0	0	0	0	0	0	0.025	8	CDEF GHJ	0805-1300	10000
P 1 DAP (CBOT)	FZ 3	.FZ	CN	1	0	0	0	0	0	0	0	0	0	0	0	0.10	8	DEFGHUK	0830-1315	100
FO 1 FUEL OIL (NYMEX)	FO 3		YA	10	0	0	0	0	0	0	0	0	0	0	0	0.01	12	BCDEFGHJUKLM	0845-1410	1000
GC 1 NY GOLD (CEC-COMEX)	GC 3		EG	1	0	0	0	0	0	0	0	0	0	0	0	0.10	13	yzABCEFGHJUK	0720-1330	100
GI 56HG COPPER (CEC-COMEX)	GI 5		EH	1	0	0	0	0	0	0	0	0	0	0	0	0.05	10	ABCEFGHJ	0825-1300	1000
HO 5 HEATING OIL NO.2 (NYM)	HO 7	Y2		10	0	0	0	0	0	0	0	0	0	0	0	0.01	12	BCDEFGHJUKLM	0850-1410	1000
II 1 3-MONTH PIBOR (MATIF)	II 3		VI	1	0	0	0	0	0	0	0	0	0	0	0	0.10	15	yzABCEFGHJUKLM	0130-0900	1000
IN 1 NOTIONAL BOND (MATIF)	IN 3		VN	1	0	0	0	0	0	0	0	0	0	0	0	0.01	15	yzABCEFGHJUKLM	0200-0930	1000
IX 1 CAC 40 INDEX (MATIF)	IX 3		VX	10	0	0	0	0	0	0	0	0	0	0	0	0.01	14	yzABCEFGHJUKL	0300-1000	1000
ID 1 ITALIAN BOND (LIFFE)	ID 3		LZ	1	0	0	0	0	0	0	0	0	0	0	0	0.01	17	yzABCEFGHJUKLMNP	0210-1005	1000
JY 1 JAP. YEN (CME-IMM)	JY 2	JY	IY	1	0	0	0	0	0	0	0	0	0	0	0	0.01	14	yzABCEFGHJUKL	0720-1400	1000
IP 5 CBOE 250 (CBOT)	JV 3	JV	CX	1	0	0	0	0	0	0	0	0	0	0	0	0.05	14	BCDEFGHJUKLMNP	0830-1515	1000
KW 2 KC WHEAT (KCBO)	KW 3		KW	1	0	0	0	0	0	0	0	0	0	0	0	0.25	8	DEFGHUK	0930-1320	100
LI 1 GERMAN BUND (LIFFE)	LI 7		LI	1	0	0	0	0	0	0	0	0	0	0	0	0.01	17	yzABCEFGHJUKLMN	0130-1000	1000
LU 1 ECU (LIFFE)	LU 2		LU	1	0	0	0	0	0	0	0	0	0	0	0	0.01	17	yzABCEFGHJUKLMNP	0205-1005	1000
LB 1 LUMBER (CME)	LB 3	LB	MR	10	0	0	0	0	0	0	0	0	0	0	0	0.10	9	CDEF GHJ	0900-1305	100
LJ 1 JGB (LIFFE)	LJ 2	LJ		1	0	0	0	0	0	0	0	0	0	0	0	0.01	17	yzABCEFGHJUKLMNP	0210-1005	1000
LX 25 LON F.T.STOCK (LIFFE)	LX 2	LF		1	0	0	0	0	0	0	0	0	0	0	0	0.05	16	yzABCEFGHJUKLMN	0235-1010	1000
LT 1 US T-BOND (LIFFE)	LT 2	LD		1	0	0	0	0	0	0	0	0	0	0	0	0.03125	17	yzABCEFGHJUKLMNP	0215-1010	320
LE 1 LON EURO DOLLAR (LIFFE)	LE 2	LE		1	0	0	0	0	0	0	0	0	0	0	0	0.01	15	yzABCEFGHJUKLM	0230-1000	1000
LG 1 LONG GILT (LIFFE)	LG 2	LT		1	0	0	0	0	0	0	0	0	0	0	0	0.03125	16	yzABCEFGHJUKLMN	0230-1015	320
LL 1 LON STERLING (LIFFE)	LL 4		LP	1	0	0	0	0	0	0	0	0	0	0	0	0.01	17	yzABCEFGHJUKLMNP	0220-1002	1000
LC 2+L CATTLE (CME)	LC 3	LC	MC	1	0	0	0	0	0	0	0	0	0	0	0	0.025	8	CDEF GHJ	0905-1300	10000
LH 2+L HOGS (CME)	LH 3	LH	MH	1	0	0	0	0	0	0	0	0	0	0	0	0.025	8	CDEF GHJ	0910-1300	10000
LW 1 EURO-SWISS (LIFFE)	LW 4	LW		1	0	0	0	0	0	0	0	0	0	0	0	0.01	17	yzABCEFGHJUKLMNP	0210-1005	1000
LQ 1 EUROMARK (LIFFE)	LQ 4	LQ		1	0	0	0	0	0	0	0	0	0	0	0	0.01	17	yzABCEFGHJUKLMNP	0200-1010	1000
MC 10 MIDCAP 400 (CME-IMM)	MD 2	MD	IN	2	0	0	0	0	0	0	0	0	0	0	0	0.05	14	CDEF GHJUKLMNP	0830-1515	1000
MW 2 MN WHEAT SPRING (MGE)	MW 3	GW		1	0	0	0	0	0	0	0	0	0	0	0	0.25	8	DEFGHUK	0930-1325	100
OU 1 MUNICI INDEX (CBOT)	MB 2	MB	CB	1	0	0	0	0	0	0	0	0	0	0	0	0.03125	15	yzABCEFGHJUKLM	0720-1405	320
MU 1 ECU BOND (MATIF)	MU 3		VU	1	0	0	0	0	0	0	0	0	0	0	0	0.01	14	yzABCEFGHJUKL	0200-0900	1000
NY 2 COTTON NO.2 (CTN)	NY 3		TC	2	0	0	0	0	0	0	0	0	0	0	0	0.01	9	DEFGHUKL	0930-1400	1000
NK 1 NIKKEI 225 (CME-IMM)	NK 3	NK	IH	1	0	0	0	0	0	0	0	0	0	0	0	0.01	15	ABCEFGHJUKLMNP	0800-1515	1000
NO 1 NATURAL GAS (NYMEX)	NO 7	YN		1	0	0	0	0	0	0	0	0	0	0	0	0.01	13	ABCEFGHJUKLM	0820-1430	1000
OX 1 AUST DOLLAR (IMM)	OX 2	AD	A	1	0	0	0	0	0	0	0	0	0	0	0	0.01	14	yzABCEFGHJUKL	0720-1400	1000
OJ 10 O JUICE (CEC-CTN)	OJ 3		TO	10	0	0	0	0	0	0	0	0	0	0	0	0.05	10	CDEF GHJUKL	0915-1345	1000
O 2 OATS (CBOT)	O 3	.O	CO	1	0	0	0	0	0	0	0	0	0	0	0	0.25	8	DEFGHUK	0930-1315	100
PL 10 PLATINUM (NYM)	PL 3		YP	10	0	0	0	0	0	0	0	0	0	0	0	0.10	13	yzABCEFGHJUK	0720-1330	100
PB 2+PORK BELLIES (CME)	PB 3	PB	MP	1	0	0	0	0	0	0	0	0	0	0	0	0.025	8	CDEF GHJ	0910-1300	10000
PT 1 PROPANE GAS (CEC-NYM)	PT 7	YT		10	0	0	0	0	0	0	0	0	0	0	0	0.01	13	ABCEFGHJUKLM	0815-1425	1000
PA 5 PALLADIUM (NYM)	PA 2	YD		1	0	0	0	0	0	0	0	0	0	0	0	0.05	13	yzABCEFGHJUK	0710-1320	1000
QA 10 NYSE INDEX (NYFE)	QA 2	FI		1	0	0	0	0	0	0	0	0	0	0	0	0.05	14	BCDEFGHJUKLMNP	0830-1515	1000
QL 1 UNLEADED GAS, NYH (NYM)	QL 5	YU		10	0	0	0	0	0	0	0	0	0	0	0	0.01	12	BCDEFGHJUKLM	0850-1405	1000
QT 1 EURO CUR U (FINEX)	QT 0		TU	1	0	0	0	0	0	0	0	0	0	0	0	0.01	14	yzABCEFGHJUKL	0720-1400	1000
RJ 1 GSCI (CME-IMM)	RJ 2	IR		1	0	0	0	0	0	0	0	0	0	0	0	0.01	15	yzABCEFGHJUKLM	0720-1415	1000
SU 1 SUGAR #11 (CSCE)	SU 3	SC		1	0	0	0	0	0	0	0	0	0	0	0	0.01	8	CDEF GHJ	0900-1243	1000
S 2 SOYBEANS (CBOT)	S 7	.S	CY	10	0	0	0	0	0	0	0	0	0	0	0	0.25	8	DEFGHUK	0930-1315	100
SV 5 NY SILVER (CEC-COMEX)	SV 4	ES		1	0	0	0	0	0	0	0	0	0	0	0	0.10	13	yzABCEFGHJUK	0725-1325	100
SX 5 LON GOLD FIX	SX 1	LG		1	0	0	0	0	0	0	0	0	0	0	0	0.10	17	yzABCEFGHJUKLMNP	0700-1530	100
SM 1 SOYBEAN MEAL (CBOT)	SM 5	.SM	CM	10	0	0	0	0	0	0	0	0	0	0	0	0.10	8	DEFGHUK	0930-1315	100
ST 1 EURO DOLLAR 3/64 (IMM)	ST 8	IE		1	0	0	0	0	0	0	0	0	0	0	0	0.01	14	yzABCEFGHJUKL	0720-1400	1000
UC 10 S&P 500 (CME-IMM)	SP 2	SP	II	2	0	0	0	0	0	0	0	0	0	0	0	0.05	14	BCDEFGHJUKLMNP	0830-1515	1000
NM 1 3 YR SWAP (CBOT)	SQ 3	.SQ	CV	1	0	0	0	0	0	0	0	0	0	0	0	0.01	15	yzABCEFGHJUKLM	0720-1405	1000
SF 1 S FRANC (CME-IMM)	SF 2	SF	IS	1	0	0	0	0	0	0	0	0	0	0	0	0.10	14	yzABCEFGHJUKL	0720-1400	1000
SI 55000 OZ AG (CBOT) DAY	S2 0	.Y2	CS	1	0	0	0	0	0	0	0	0	0	0	0	0.10	13	yzABCEFGHJUK	0720-1325	100
TW 1 5 YR T NOTE (FINEX)	TW 3	TN		1	0	0	0	0	0	0	0	0	0	0	0	0.015625	15	yzABCEFGHJUKLM	0720-1415	840
TE 10 CRB INDEX (NYFE) 500X	TE 3	FC		1	0	0	0	0	0	0	0	0	0	0	0	0.01	13	ABCEFGHJUKLM	0800-1415	1000
TB 1 T-BILL 90-D (CME-IMM)	TB 3	TB	IT	1	0	0	0	0	0	0	0	0	0	0	0	0.01	14	yzABCEFGHJUKL	0720-1400	1000
ME 1 10 YR NOTE (CBOT) DAY	T2 2	T2	CU	1	0	0	0	0	0	0	0	0	0	0	0	0.03125	15	yzABCEFGHJUKLM	0720-1405	320
TX 1 US DOLLAR INDX (FINEX)	TX 2	TX		1	0	0	0	0	0	0	0	0	0	0	0	0.01	14	yzABCEFGHJUKL	0720-1400	1000
UP 1 APT STERLING (LIFFE)	UP 2	LS		1	0	0	0	0	0	0	0	0	0	0	0	0.01	17	yzABCEFGHJUKLMNP	0220-1002	1000
TR 1 T-BOND (CBOT) DAY	U2 3	.U2	CC	1	0	0	0	0	0	0	0	0	0	0	0	0.03125	15	yzABCEFGHJUKLM	0720-1405	320
UB 10 CRB INDEX (NYFE) 250X	UB 1	FU		1	0	0	0	0	0	0	0	0	0	0	0	0.01	13	ABCEFGHJUKLM	0800-1415	1000
US 1 VALUE-LINE (KCBO)	VL 0	KV		1	0	0	0	0	0	0	0	0	0	0	0	0.05	14	BCDEFGHJUKLMNP	0830-1515	1000
W 2 WHEAT (CBOT)	W 4	.W	CW	1	0	0	0	0	0	0	0	0	0	0	0	0.25	8	DEFGHUK	0930-1315	100
Y2 1 2 YR NOTE (CBOT) DAY	Y2 2	.Y2	C2	1	0	0	0	0	0	0	0	0	0	0	0	0.0078125	15	yzABCEFGHJUKLM	0720-1405	128
ZN 5 IMI (CSC)	ZN 0	SN		10	0	0	0	0	0	0	0	0	0	0	0	0.05	14	BCDEFGHJUKLMNP	0830-1515	100
ZA 1 MINI-VLINE (KCBO)	ZA 0	KM		1	0	0	0	0	0	0	0	0	0	0	0	0.05	14	BCDEFGHJUKLMNP	0830-1515	100

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